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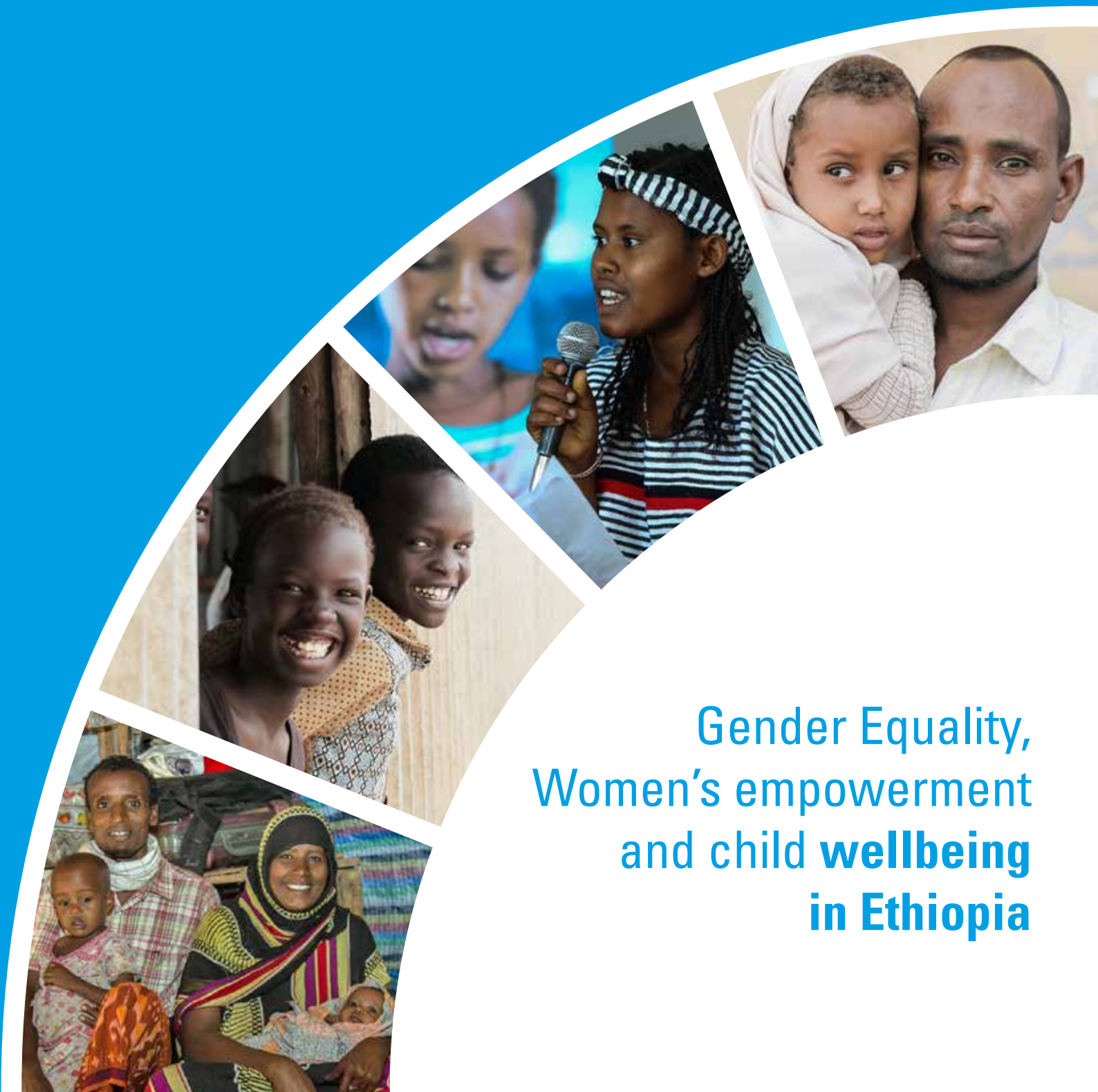

# Gender Equality, Women's empowerment and child **wellbeing in Ethiopia**

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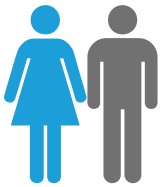
# GENDER EQUALITY, WOMEN'S EMPOWERMENT AND CHILD WELLBEING IN ETHIOPIA



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Gender Equality, Women's Empowerment and Child Wellbeing in Ethiopia is based on the Ethiopian Demographic and Health Survey Data Sets of 2000, 2005, 2011, and 2016.

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# Foreword

Ethiopia has come a long way in improving the situation of women and children. The country achieved six of the eight Millennium Development Goals (MDGs) and is trying to address the remaining challenges within the framework of Sustainable Development Goals (SDGs).

With the leadership of the Ministry of Women, Children and Youth (MOWCY), UNICEF and partners have supported this "Gender Equality, Women's empowerment and child wellbeing" study in Ethiopia. The purpose of the study is to reflect the achievements and challenges of the past two decades on gender equality, women's empowerment and child wellbeing outcomes. The findings of the study will also inform future policymaking and programmes.

The study adopts quantitative methods and uses the Ethiopian Demographic and Health Survey data 2000- 2016. It is also informed by global and country-specific literature, policy frameworks and international treaties and conventions.

The study finds that over the last 16 years, Ethiopia has made immense progress on several domains of Gender Equality and Women's Empowerment commitments.

The policy and legal environment have been improved. For example, the education sector registered an increase in school attendance rates and narrowing the gender gap. Pre-primary, primary, and secondary school attendance rates have increased significantly, and the gender gap in primary school enrolment is eradicated.

The incidence of Female Genital Mutilation (FGM) in women aged 15-19 years declined by 20 per cent, while child marriage halved nationally from 20 per cent to 11 per cent for girls aged 15-17 years.

The coverage of maternal and young child healthcare services registered progress, where stunting and underweight decreased consistently in urban and rural areas and across all regions.

Despite such progress, the challenge in gender inequality and women's empowerment remains high. For instance, improvements in adults' educational attainment at the highest educational level have been slow, and the gender inequality gap continues to be extensive. The national progress towards the elimination of child marriage and teenage pregnancy is lagging. In Afar, a third of women aged from 15-17 were already married in 2016, and the rate of FGM for women aged 15-19 remained as high as 96 per cent. Similarly, the rate of FGM in Somali is at 87 per cent. The national FGM rate among girls aged 0-14 remained at 24 per cent, while more than a third of adolescent girls in the country experienced some form of violence.

The challenges faced by adolescent girls and adult women significantly impact the wellbeing of children. The findings assert that the interlinkages between the domains of women's empowerment in the Economic, Education, Familial/Interpersonal level have extensive and positive associations in the five dimensions of child wellbeing. Children whose mothers are empowered are less likely to be deprived in education, health, health-related knowledge, nutrition and protection. On the other hand, attitudes towards wife-beating showed a negative relationship with children's wellbeing outcomes.

Acknowledging the efforts and achievements of the government and non-governmental actors, MOWCY and UNICEF call on all concerned parties to give due consideration to the findings of this study and reinforce their commitment towards enabling women and children enjoy their human rights, as well as utilize the economic and social opportunities in Ethiopia. There is a significant need for an integrated approach, commitment to increased budget allocation and scaling up of efforts to tackle persisting challenges of gender inequality and empower women across different domains to enhance gender equality and children wellbeing.

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# Acknowledgments

UNICEF would like to extend its sincere thanks to all the stakeholders who participated in this study for bringing it to a successful completion. We wish to thank the Ministry of Women, Children and Youth (MoWCY) and the members of the Steering Committee of the National Alliance to End Child Marriage and Female Genital Mutilation/Cutting in Ethiopia for steering the various consultations at the inception stage, reviewing the drafts and providing feedback, as well as supporting the validation of the findings at a stakeholders' workshop[1] held in Addis Ababa. We would like to thank H.E. Semegne Wube, State Minister at MOWCY, and Seleshi Tadesse, Director of the Women's Mobilization and Participation Directorate at MOWCY for their continuous efforts to solicit the contribution of other stakeholders, including the Central Statistical Agency (CSA), academia and civil society organizations.

UNICEF would also like to thank the Social Policy Research Institute (SPRI), for the expertise and commitment it demonstrated during the undertaking of this study. In particular, we would like to thank the authors of this report: Professor Chris De Neubourg, Ms Erëblina Elezaj, Ms Nesha Ramful, and Dr Victor Cebotari. The study was managed by and received technical support from Ellen Alem (Gender Specialist), Ana Gabriela Guerrero Serdan (Chief of Social Policy Section), Vincenzo Vinci (Social Policy Specialist), Martha Kibur (Monitoring and Evaluation specialist) and Hiwot Gebeyehu (Gender and Child Rights Officer) in UNICEF's Social Policy and Evidence for Social Inclusion (SPESI) section in close collaboration with the gender and monitoring and evaluation focal persons in all UNICEF programme sections.

1 See Annex 75 for a complete list of participants and contributors.

# List of acronyms

| | |
|---|---|
| AGP | Agricultural Growth Programme |
| AIDS | Acquired Immunodeficiency Syndrome |
| ANC | Antenatal Care |
| ASPIRE | Atlas of Social Protection Indicators of Resilience and Equity |
| BMI | Body Mass Index |
| CEDAW | Convention on the Elimination of All Forms of Discrimination Against Women |
| CRC | Convention on the Rights of the Child |
| CSA | Central Statistical Agency |
| CFA | Confirmatory Factor Analysis |
| DDS | Dietary Diversity Score |
| DEVAW | Declaration on the Elimination of Violence Against Women |
| ECCE | Early Childhood Care and Education |
| ECDP | Education Sector Development Plan |
| EDHS | Ethiopia Demographic and Health Survey |
| EFA | Exploratory Factor Analysis |
| EU | European Union |
| FGM | Female Genital Mutilation |
| GBV | Gender-Based Violence |
| GTP | Growth and Transformation Plan |
| HAZ | Height-for-Age Score |
| HEW | Health Extension Workers |
| HH | Household |
| HIV | Human Immunodeficiency Virus |
| HSTP | Health Sector Transformation Plan |
| HTP | Harmful Traditional Practices |
| IYCF | Infant and Young Child Feeding |
| MAD | Minimum Acceptable Diet |
| MDD | Minimum Dietary Diversity |
| MDG | Millennium Development Goal |
| MMF | Minimum Meal Frequency |
| MODA | Multiple Overlapping Deprivation Analysis |
| MOWCY | Ministry of Women, Children and Youth |
| MTCT | Mother-To-Child Transmission |
| NAPGE | National Action Plan for Gender Equality |
| NGO | Non-Governmental Organization |
| NHRS | National Reproductive Health Strategy |
| NNP | National Nutrition Programme |
| NNS | National Nutrition Strategy |
| ORS | Oral Rehydration Solution |
| PSNP | Productive Safety Net Programme |
| SEM | Structural Equation Model |
| SDG | Sustainable Development Goal |
| SNNPR | Southern Nations, Nationalities, and People's Region |
| SOPG-ECCE | Strategic Operational Plan and Guidelines for Early Child Care and Education |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| USAID | United States Agency for International Development |
| VIF | Variance Inflation Factor |
| WASH | Water, Sanitation and Hygiene |

| | |
|---|---|
| WAZ | Weight-for-Age score |
| WDIP | Women's Development Initiatives Project |
| WHZ | Weight-for-Height score |
| WEI | Women's Empowerment Index |
| WHO | World Health Organization |
| WMS | Welfare Monitoring Survey |

# Executive summary

## Purpose and aim

Ethiopia is one of the African countries that achieved many of the Millennium Development Goals (MDGs) and responded positively to the challenges aligned with the new global development agenda – the Sustainable Development Goals (SDGs). Despite efforts and progress, challenges remain. Despite progress towards achieving gender equality and women's empowerment, the desired goals have not been met over time. This is partly due to the complexity involved in defining, addressing and monitoring these processes. There is a need to better understand the breadth and depth of gender equality and women's empowerment in Ethiopia to achieve greater progress against the SDG 5 targets.

The aim of this study is to conceptualize and empirically measure gender equality and women's empowerment in Ethiopia, and to conduct trend analysis of the progress of these domains since the turn of the century. The study also involves multivariate analysis to assess the relationship between women's empowerment and five child wellbeing outcomes: nutrition, education, health, health-related knowledge, and female genital mutilation (FGM). To the extent that gender equality and women's empowerment are intrinsic human values and rights, the study provides empirical evidence to better inform programme and policy design and implementation.

## Approach

The concepts of gender equality and women's empowerment are complex and multidimensional, with no commonly known frameworks that define them holistically. This study relies on international conventions and other instruments on children's and women's rights[1] to define and select parameters and indicators on gender equality, women's empowerment, and child wellbeing outcomes. The parameters and indicators are further contextualized in the legislation, policy documents and strategies of Ethiopia[2] and through extensive consultations with national stakeholders and development partners in the country.

Most of the analyses were conducted using the Ethiopian Demographic and Health Survey (EDHS) 2000, 2005, 2011 and 2016 waves, but in certain domains of gender equality other data sources - the Welfare Monitoring Survey (WMS) and World Bank ASPIRE database[3] – have been used to fill the EDHS data gaps.

The analytical process includes two steps. The first step presents the descriptive findings of the trend analyses for gender equality and women's empowerment (constructed using factor analysis and varimax rotation to group indicators of empowerment into domains). Subsequently, ordered logistic regressions are employed to observe associations between women's empowerment and children's wellbeing outcomes.

The study's concluding section outlines recommendations for action-oriented implementation and further monitoring.

## Key findings

**Trend analysis of nutritional outcomes of children under five, adolescents and adults shows that significant progress has been achieved in several domains over the last 16 years, though challenges remain prevalent in the sector.** Incidence of early initiation of breastfeeding has increased from 49 per cent in 2000 to 72 per cent in 2016, incidence of stunting

1 The following international documents were reviewed: the Convention on the Rights of the Child (CRC) (1989), the Universal Declaration on Human Rights (1948), the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979), the Convention on the Political Rights of Women (1953), and the Declaration on the Elimination of Violence Against Women (DEVAW) (1993).

2 The National Policy on Ethiopian Women (1993); the Constitution of the Federal Democratic Republic of Ethiopia (1995); the Family Law (2000); the Criminal Law (2005); the National Gender Equality Strategy and Action Plan for Gender Equality (2006-2010); the EU+ Joint Strategy on Nutrition for Ethiopia (2016-2020); the National Identity Card Registration Proclamation No. 760/2012; the Ethiopian Women's Development and Change Package, the National Strategy and Action Plan on Harmful Traditional Practices (2013), the Sexual and Reproductive Health Strategy (2016-2015), the National Adolescent and Youth Health Strategy (2016-2020), the Health Sector Transformation Plan (2015/16-2019/20), the Education Sector Development Plan 2016-2020 and the National Human Rights Action Plan (2013).

3 The WMS was used to measure incidence of FGM among girls aged 0-14 years as in EDHS this indicator is measured at girls' and woman's individual level only for the age group 15-49 years, while the World Bank ASPIRE database was used to gain an insight on labour market outcomes among women and men.

among children under five has decreased by 12 percentage points, the underweight rate has nearly halved, the rate of exclusive breastfeeding has reached 57 per cent, and incidence of short stature among women decreased from 3.7 per cent in 2000 to 2.4 per cent in 2016.

**Progress towards other nutritional outcomes has been slow and even stalled.** The percentage of children aged 6-23 months who received a minimum acceptable diet – a combination of minimum meal frequency and minimum meal diversity – increased by only 2 percentage points, from 5 per cent in 2000 to 7 per cent in 2016, and there are vast geographical disparities in favour of urban areas. **Gender inequality remains high in both food and micronutrient deprivation across all age groups.**

**Improvements in stunting and underweight outcomes have been significant,[4] especially among girls.** The percentage of stunted girls was significantly lower in 2016 (35 per cent) than that of boys (41 per cent). Incidence of stunting and underweight has been decreasing consistently since 2000 in both urban and rural areas and across regions. Across regions, the sharpest decline in stunting occurred in Somali and Tigray, and for underweight in SNNPR.

**Progress in nutritional outcomes among adolescents has fluctuated, and a significantly larger share of boys and men than of girls and women were undernourished in 2016.** Twenty-eight per cent of adolescent girls – aged 15-19 years – were too thin for their age compared to 59 per cent of adolescent boys. Among adults the gender gap in undernutrition was slightly narrower. In 2016, the percentage of undernourished adolescents and adults was significantly higher in rural areas and in Afar, Tigray, and Somali. Over the 16-year period, the percentage of adolescent girls who were underweight decreased significantly in rural areas and Benishangul-Gumuz, and that of adult women fell sharply in urban areas and the Somali region.

**Gender inequality in prevalence of anaemia is also wide among adolescents and adults, and trend analysis shows exacerbation between 2011 and 2016.** Nearly 60 per cent of girls and boys under five in Ethiopia were anaemic in 2016. Adolescent girls were more than twice as likely as adolescent boys to be anaemic, while for adult women the likelihood was nearly three times higher. Anaemia prevalence in 2016 was especially high among children living in rural areas and in Somali. The largest gender inequalities were noted among adolescents in Afar and adults in Somali.

**Notable progress has been achieved in increasing coverage of maternal and young child healthcare services.** Between 2000 and 2016, coverage of adequate antenatal care (ANC) services increased from 10 per cent to 32 per cent, incidence of skilled birth deliveries from 6 to 33 per cent, and the percentage of children under five who were fully immunized rose to 39 per cent from 17 per cent. Health-seeking behaviour also noted a slight improvement; treatment was sought for 27 per cent of children under five who suffered from diarrhoea, fever or cough in the two weeks preceding the survey compared to 17 per cent in 2000, with insignificant gender differences. In addition, prevalence of HIV testing increased by more than nine times among both women and men, from 5 per cent to 44-48 per cent.

**Despite the progress achieved, the coverage rates of basic maternal and child health services are low considering their detrimental effects on the survival and health of children and mothers, and geographical disparities are very wide, indicating issues with service availability in some regions.** Antenatal care and immunization coverage were twice as high in urban areas as in rural areas, while skilled birth coverage was three times as prevalent. Somali and Afar had the lowest coverage rates of antenatal care, skilled birth attendance, and full vaccination among children under five.

**Gender inequality in comprehensive knowledge about HIV/AIDS[5] prevention and transmission has widened over the last decade[6] among both adolescents and adults.** The share of adolescent girls (24 per cent) and adult women (19 per cent) who had comprehensive knowledge about HIV/AIDS was significantly smaller in 2016 than for

4 Figures for 2005 are not presented because of missing data on more than 50 per cent of observations.

5 Comprehensive knowledge includes (i) Having heard about HIV/AIDS; (ii) Knowing that HIV/AIDS transmission can be prevented by having sex with one partner who has no other partners or by always using condoms during sex; (iii) Rejecting any of the two most common misconceptions about HIV/AIDS transmission – that HIV can be spread by mosquito bites or by sharing food with an HIV-infected person; and (iv) Knowing that a healthy-looking person can have HIV.

6 Indicator missing for 2000 because EDHS 2000 does not cover related questions on the main misconceptions about HIV transmission.

their male counterparts. Trend analysis shows that improvements in this area over the last decade have been significant only for adult men aged 20-59 years. Gender disparities in HIV/AIDS knowledge were also widespread across regions. A significantly higher percentage of adolescent boys in Harari and Dire Dawa and adult men in Dire Dawa, Gambella, and Amhara had comprehensive knowledge about HIV/AIDS prevention and transmission than did their female counterparts. Harari and Amhara also had high inequality in health-related knowledge in 2005, showing no improvements over the decade. It must be emphasized that knowledge about HIV/AIDS remains highly problematic for the region of Somali, where the rates were drastically low for both adolescents and adults irrespective of their gender.

**The gender gap in knowledge about risks of HIV transmission from mother to child (MTCT) during pregnancy, at childbirth, and through breastfeeding has been widening over the last 16 years.** The percentage of adolescent boys and adult men who were aware of risks of MTCT of HIV has decreased consistently since 2000, reaching 11 per cent and 9 per cent respectively in 2016. The proportion of adolescent girls and adult women that possessed this knowledge reached the lowest level and has stalled since 2011. **Gender inequalities in knowledge on MTCT of HIV are wide across most regions with the exception of Addis Ababa and Dire Dawa, while in Afar the gap has been consistently wide since 2000.** Further research is necessary to gain an insight in this worsening trend.

**Figures on HIV prevalence show that women of reproductive age face twice as high a risk of infection as men.**[7] HIV prevalence has consistently been higher in urban areas than in rural areas, reaching a seven-fold larger figure in 2016, 2.9 per cent compared to 0.4 per cent respectively. Over the last 11 years, prevalence has been highest in Addis Ababa, Gambella and Harari regions.

**Major progress has also been achieved in the area of family planning. Prevalence of knowledge about modern contraception increased significantly among adolescents**, from 68-70 per cent in 2000 to 95-97 per cent in 2016. **Incidence of women having an unmet need for family planning – spacing or limiting the number of births – fell** from 36 per cent in 2000 to 22 per cent in 2016. **However, progress has not been consistent across all geographical areas.** More than twice as many women in rural areas (25 per cent) had an unmet need for family planning in 2016, compared to 11 per cent of women in urban areas; by region incidence was highest in Gambella and Oromia.

**Exposure to family planning information, on the other hand, showed a worsening trend between 2011 and 2016 and the gender gap is wide among adults.** Over the 16-year period, the exposure of adolescents and adult women to family planning information improved significantly in Harari and Benishangul-Gumuz, while rural areas and Amhara saw the highest increase in incidence among adult men. The opposite occurred in Tigray, urban areas, and Somali. Adolescents living in Afar and especially in Somali are significantly less likely to be exposed to family planning information than those living in all the other regions.

**Progress in the education sector has been remarkable, especially in increasing school attendance rates at all levels and narrowing the gender gap.** Attendance rates have increased significantly for pre-primary, primary, and secondary education. **The gender gap in primary school enrolment has been eliminated, and the primary school attendance rate of young adolescent girls (aged 10-14 years) exceeded that of their male peers** (80 per cent and 78 per cent respectively). **The gender gap in secondary school attendance rates has narrowed to a 5-percentage-point difference (higher for boys)**. The share of children who attended the right grade for their age nearly doubled from 31 per cent in 2000 to 61 per cent in 2016. **These improvements have not, however, been widespread geographically and by gender.** In 2016, the pre-primary and primary school attendance rates were significantly lower in rural areas and the Somali region, while Afar and Oromia ranked low in primary school attendance. **Tigray, SNNPR, and Benishangul-Gumuz made the most significant progress in narrowing the gender gap in secondary school attendance over the 16-year**

7 Even though the data show high gender inequality and that HIV prevalence has decreased over the last 11 years, the results should be interpreted with caution because they were subject to the respondents' approval (willingness) to get tested during the survey.

**period**; in Amhara the percentage of adolescent girls attending secondary school exceeded that of boys. In Afar, Harari, and Somali gender inequality increased in secondary school attendance.[8]

**Gender patterns in continuous school attendance reversed in 2011; in 2016 15-17-year-old adolescent boys were more likely to attend school with a delay than girls in the same age group. In addition, the gender gap remains wide in many regions.** Incidence of delay in schooling among adolescent girls (aged 15-17 years) increased in Addis Ababa. Moreover, primary school adolescents residing in Oromia and SNNPR were more likely to attend school with delay in 2016, as were secondary school adolescent girls residing in Somali, SNNPR, and Afar and their male peers residing in Oromia. The share of young adolescents – aged 10-14 years – in rural areas attending school with delay (42 per cent) was nearly three times that of their peers residing in urban areas (16 per cent).

**The educational attainment of adults – measured as the highest educational level attained – shows that improvements in education outcomes have been slow and that the gender inequality gap continues to be wide.** Only 15 per cent of women aged 20-49 years had completed secondary or higher education in 2016 compared to 23 per cent of men, with an increase of about 5 percentage points for both since 2000. **The percentage of adult women and men with secondary or higher education was significantly lower in rural areas, but women were less likely to complete secondary or higher education regardless of where they resided.** Educational attainment improved significantly in Gambella and Tigray for both women and men, while progress in Harari and Somali favoured mainly men. Nonetheless, Somali (and Afar) had the lowest percentage of both women and men with secondary or higher education in 2016.

**The illiteracy rate among adolescents has declined significantly since 2000 but remained high in the country overall, particularly for adult women. This implies serious challenges with the quality of education**. Very high adult illiteracy rates in Somali, SNNPR, and Afar, and very high incidence of adolescent illiteracy in Somali unmask geographical disparities in learning outcomes between men and women. Gender inequality in adult literacy has been the highest in Gambella since 2000, while Somali had the widest gender gap in adolescent literacy in 2016. Adolescent illiteracy rates have declined greatly in Amhara and Oromia, among girls and boys respectively, while Tigray has seen the highest decline in illiteracy among adult women and men.

**Trend analysis of child protection indicators shows that progress in eliminating child marriage and teenage pregnancy has been slow over the last 16 years.** Even though incidence of child marriage halved between 2000 and 2016, from 20 per cent to 11 per cent, **in Afar nearly a third of 15-17-year-olds were already married in 2016**. Incidence of teenage pregnancy declined to 13 per cent in 2016, but in Somali it was as high as 19 per cent and in Afar 23 per cent. In addition, more than a third of adolescent girls experienced some form of violence – physical, psychological or sexual – during 2016. Incidence was significantly higher in urban areas, Addis Ababa, Amhara, and Harari.

**Incidence of female genital mutilation (FGM) – measured at the level of adolescents aged 15-19 years – declined** from 71 per cent in 2000 to 52 per cent in 2016, but in Somali it remained as high as 96 per cent and in Afar at 87 per cent. Incidence of FGM among 0-14-year-old girls remained at 24 per cent between 2011 and 2016.

**Changes in attitudes towards FGM.** Only 17 per cent of adolescent girls shared the opinion that FGM should be continued or were undecided about it in 2016, compared to 65 per cent in 2000. The figure was even lower among adolescent boys (14 per cent).

**Changes in attitudes towards GBV[9] were slower, and the gender gap is wide. Significantly fewer men** (between 13 and 20 per cent) **shared the opinion that wife-beating is justified in certain situations compared to** between 37 and 44 per cent of **adolescent girls and adult women**, respectively. In 2016, wife-beating was widely justified among men in Amhara, and women in Oromia, Afar, Tigray, and SNNPR.

8 These figures should be interpreted with caution given that these three regions had the lowest attendance rates – especially among adolescent girls – in 2000.

9 Measured as justification of wife-beating in five different situations: (i) If the woman goes out without telling her husband; (ii) If the woman neglects the children; (iii) If the woman argues with her husband; (iv) If the woman refuses to have sex with her husband; and (v) If the woman burns the food.

**Trend analysis of labour market outcomes of women and men shows that women are more disadvantaged than men in the labour market, but also that labour market conditions in Ethiopia are poor and provide little security and protection**. The share of vulnerable employment has consistently been high – above 86 per cent – with less than 14 per cent of the employed population waged or salaried workers. The employment rate of women increased from 64 per cent in 2000 to 71 per cent in 2016 but was lower than that of men (85 per cent). The labour force participation rate of women was lower and their unemployment rate higher, including among 15-24-year-olds. The share of women in vulnerable employment and wage and salaried workers' group is slightly smaller than that of men.

**Women and girls are severely disadvantaged compared to men in the use of time resource. Household chores are unequally shared between women and men, due to prevailing traditional roles.** The share of women responsible for fetching water for their household was eight times higher than that of men in 2016, with an insignificant change from 2005. In addition, only 37 per cent of men helped their wives/partners with household chores in 2016, and only 18 per cent did so on regular/daily basis.

**Women's control of other resources is limited compared to that of men, especially in certain geographical areas and regions.** Only 15 per cent owned and used a bank account in 2016 compared to 26 per cent of men, while 27 per cent (compared to 54 per cent of men) owned and used a mobile phone. With the exception of Addis Ababa, Dire Dawa, Tigray, and Harari, incidence of bank account ownership and usage was very low among women.

**Fewer women have control over land compared to men, and exercising legal rights over real estate is becoming a challenge in the last few years among all citizens**. Women are more likely to own real estate jointly with someone else, while the opposite is the case for men.

**Changes in the relations between women and men, and in women's participation in decision making, have been positive and significant**. A significantly higher percentage of women participated in decisions about their own health (81 per cent), making large household purchases (78 per cent) and visiting family or relatives (79 per cent). An increasingly higher percentage have also been participating in decisions about how their partner's/husband's earnings will be spent. **Across regions, Somali, SNNPR, and Afar are an exception and display lower incidence of women's participation in decision making.** Control over sexual relations is also an exception: only 45 per cent of women had control over their sexual relations in 2016 compared to 39 per cent in 2000.

**In 2016, only 6 out of 100 Ethiopian women in union were empowered**. Empowerment of women in union in Ethiopia has seen progress over time, though it starts from a very low base of 2 per cent in 2005 and reaches close to 6 per cent in 2016. **The overall empowerment of women not in union has shown greater progress over the years. In 2016, one in ten Ethiopian women not in union were empowered.** Nationwide, empowerment rates for women not in union have increased from 6 per cent in 2005 to 11 per cent in 2016.

**The rural-urban divide in women's empowerment is wide**. Overall, 27 per cent of urban women in union were empowered in 2016 compared to 2 per cent of their counterparts residing in rural areas. Five more times more urban women not in union than their rural counterparts were empowered in the same year.

**Regional disparities in empowerment are also wide**. In 2016, the incidence of empowerment of women in union was relatively high in Addis Ababa (34 per cent) followed by Harari (13 per cent) compared with other regions. The lowest rates of women's empowerment among women in union in the country were seen in Somali, Benishangul-Gumuz, and SNNPR: 1 per cent, 3 per cent and 4 per cent, respectively. The highest incidence of empowerment among women not in union was seen in Addis Ababa (43 per cent), Harari (31 per cent) and Dire Dawa (24 per cent). Meanwhile, Somali and SNNPR had the lowest incidence of women's overall empowerment in this group, with 5 per cent and 7 per cent respectively.

**Nationwide, more than 8 in 10 women in union are not empowered in the education domain compared to 7 in 10 women not in union.** More than 80 per cent of Ethiopian women in union have not been empowered in education in 2005, 2011 or 2016. Illiteracy and completion rates of primary education among rural women in union

are strikingly low: 9 out of 10 rural women in union lacked progress in these indicators between 2005 and 2016. In contrast, 4 out of 10 urban women in union were similarly not empowered in either of the two indicators. Almost three times more urban women not in union were empowered in the education domain compared to rural women.

**Despite progress over the years, only 2 in 10 women in union are in regular paid employment in Ethiopia. Among women not in union, empowerment in the economic domain increased** from 21 per cent in 2005 to 33 per cent in 2011 and then **declined** to 27 per cent in 2016**.** Women in union residing in rural areas are three times more disadvantaged in the economic domain than women living in urban areas. For every two urban women not in union empowered in the economic domain, there is only one empowered rural woman not in union.

**The proportion of both women in union and women not in union who believe that wife-beating is not justified in any situation more than doubled between 2005 and 2016, but the rural-urban gap remains large.** Overall, the proportion of women in union empowered in all the indicators of this domain increased from 15 per cent in 2005 to 33 per cent in 2016, while among women not in union it increased from 24 per cent to 41 per cent. Despite this progress, the rural-urban divide has also more than doubled over the years. In 2016, for instance, 60 per cent and 28 per cent of urban and rural women in union, respectively, believed that wife-beating is not justified in any of the mentioned situations. Among women not in union the proportion of urban women fully empowered in this domain is twice that of rural women.

**There is much progress in the participation of women in union in the household decision-making over the years and the gap between rural and urban areas has narrowed.** The proportion of women in union empowered in all the indicators in the familial/interpersonal domain increased significantly over years, from 39 per cent in 2005 to 64 per cent in 2016. The urban-rural gap has narrowed over time. In 2016, 62 per cent and 73 per cent of rural and urban women in union, respectively, were empowered in the familial/interpersonal domain.

**Multivariate analyses of the associations between domains of women's empowerment show that these domains are often interlinked.** Women in union who were empowered in the education domain were more likely to be empowered in the economic, familial/ interpersonal, and attitudes towards wife-beating domains, while being empowered in the familial domain was found to be positively associated with attitudes towards wife-beating domain. Among women not in union, positive statistical correlation was found between empowerment in education and the attitudes towards wife-beating domain.

The results of the **multivariate regression analyses show that children whose mothers are empowered are less likely to be deprived in nutrition, health-related knowledge and education**. At the same time, **no statistically significant associations were found between women's empowerment and child health, as well as FGM,** indicating that these topics need to be investigated more in depth in the future to inform policy action and interventions.

**The findings from regression analyses emphasized the role of other factors for the wellbeing of children in Ethiopia, namely region and area of residence, household wealth, and paternal educational attainment**. Children residing in regions other than Addis Ababa are more likely to have negative wellbeing outcomes. Residence in rural areas is negatively associated with children's wellbeing, especially for health and education outcomes. Household wealth on the other hand was found to be a positive predictor for children's outcomes. **Children's gender is not a significant predictor for their wellbeing**. Paternal educational attainment is positively correlated with children's outcomes in education and health-related knowledge.

**Disaggregation of gender equality and women's empowerment indicators by wealth quintiles shows that inequities persist across all sectors and domains**, **particularly in nutritional, health, education, and child protection outcomes**. Progress in empowerment of women in union between 2005 and 2016 occurred almost exclusively among women in the richest wealth quintile. There is almost no empowerment and limited progress over the years among women in the poorest wealth quintiles. Among women not

in union in the poorest wealth quintile, incidence of empowerment increased from 0.7 per cent in 2005 to 2.2 per cent in 2016. In the richest wealth quintile, empowerment of women not in union doubled from 15 per cent in 2005 to more than 30 per cent in 2016.

## Policy action

**Gender equality and women's empowerment have seen improvements over the years, but disparities between rural and urban areas and across regions are widespread.** It is important to note that for many domains of empowerment, the lower base from which much of the progress has started still leaves large segments of the target population vulnerable today to deprivation and lack of empowerment. The findings also point to interlinkages between domains of women's empowerment and significant positive associations between empowerment and children's wellbeing outcomes.

Over the past decades, there have been increased policy efforts to address gender equality, women's empowerment and child wellbeing in Ethiopia. These policy efforts must be maintained and scaled up to encompass the multidimensional domains of gender equality and women's empowerment. **There is a need for intersectoral approaches to tackling gender inequality, persisting challenges with empowerment across different domains, and child wellbeing.** An intersectoral focus for policy actions has the potential for increased effectiveness, efficiency, and coverage.

The rural-urban gaps and geographical disparities across regions in gender equality and women's empowerment indicate that national policies that have been implemented so far may not have always addressed challenges that stem from grassroots level. **Policy actions must therefore incorporate intersectoral planning at federal, regional, and community levels.**

**Policy action must also take into account the socio-cultural and economic characteristics of the target populations** and make use, to the extent possible, of **modern information and communication technologies** to better reach individuals, households, and communities**.**

Conceptualization and monitoring of gender equality, women's empowerment, and child wellbeing would benefit from **further investments in the design of indicators and data collection tools that better reflect the developmental domains in Ethiopia, as set out in the SDG 5 targets.**

# Introduction

## Background

Ethiopia achieved six of the eight Millennium Development Goals (MDGs), but MDG 3 on gender equality and women's empowerment and MDG 5 on improving maternal health were not reached despite significant efforts and progress.[10] Women and children are typically overrepresented among the poor in the country. The main sources of vulnerability for women and children include consumption poverty, malnutrition, poor health and education. Girls and women face a myriad of other issues including: lack of access to resources and community participation, limited decision-making power within the household, gender-based violence, child marriage, female genital mutilation, lower educational attainment after primary education, teenage pregnancy, and greater exposure to health and nutrition risks associated with pregnancy.[11]

Many countries in sub-Saharan Africa have not been able to step out of the vicious circle of never-ending challenges facing girls and women. While fighting gender inequality, many have failed to recognize that women and men (and girls and boys) have different needs, capacities and contributions that should be addressed differently. Even women and girls cannot be treated as a homogenous group given the varying needs and risks they face at different stages of their life cycles. Poverty is undeniably not gender neutral, but if viewed with a gender lens poverty reduction strategies can be far more efficient and effective. Given that studies have proven that women are more likely than men to spend their incomes on the betterment of their families and their children, it becomes increasingly important to relate women's empowerment to the wellbeing of their children, so that adequate interventions can be put in place to break the intergenerational cycle of poverty.

Some of the hindrances faced by girls and women in Ethiopia may be different to those in other countries in the region. This is because the countries in sub-Saharan Africa are characterized by different stages of economic development, and many struggle with different types of emergency situations like conflict, political turmoil, harsh climatic conditions and natural disasters. These result in considerable differences between countries and regions within the same country; some countries experience economic progress while others stagnate, services are often widely available in urban areas but not in rural ones, some regions are more advantaged than others because of favourable climatic conditions or available infrastructure, and so on. Socio-cultural and governance structures can also contribute to inequalities within a country. Given the persisting intergenerational challenges in which the girls and women are entangled, it is high time to act to break this vicious circle. With its approval of the Sustainable Development Agenda in 2015, the Government of Ethiopia has already made the first step in this regard by committing to *achieve gender equality and empower all women and girls* (SDG 5) among other things.

## Purpose of the study

The initiative to carry out this study is timely as it is overarching in the range of topics that it covers, each selected in correspondence with SDG 5 and other targets and related rights stemming from national and international conventions, and legal and policy documents. The selected indicators are age-specific and, as such, reflect the lifecycle needs of girls and boys (and women and men) and the risks that they face, while at the same time unmasking present inequalities in outcomes and their potential implications on equity. As such, the findings of the study will inform the design of policy interventions aimed at enhancing gender equality and equity in the short and long terms. The development of an official measure of women's empowerment for the first time in Ethiopia and assessing its relationship with various aspects of children's wellbeing is intended to instigate discussions on gender-sensitive policy responses to improve children's wellbeing. Finally, the trend analysis on gender equality and women's empowerment indicators using data from EDHS 2000, 2005, 2011, and 2016 sheds

10 Millennium Development Goals Report Ethiopia. Assessment of Ethiopia's Progress towards the MDGs. October 2015, Addis Ababa, Ethiopia. Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/EthiopiaMDG%202014%20Final%20final.pdf

11 USAID (2018). Gender Equality and Women's Empowerment in Ethiopia. Available at: https://www.usaid.gov/ethiopia/gender-equality-and-womens-empowerment

light on progress achieved through certain policies and strategies implemented in the country, while disaggregation of data by regions and urban and rural areas provides evidence on inequality within the country. Most of the indicators have also been disaggregated by wealth quintile to gain insight into equity issues related to realization of rights of children, adolescents, and adult women and men.

## Data and limitations

Most of the quantitative analyses in this study have been carried out using four EDHS waves 2000, 2005, 2011, and 2016. This was because these datasets include a comprehensive list of indicators for measuring outcomes and realization of rights among child and adolescent girls and boys, and adult women and men. In addition, the list of indicators that they contain, and the survey design, are consistent throughout the years, which enabled trend analysis to be conducted for the 16-year period and progress to be monitored in achievement of SDG 5 and its targets in the future.

The three chapters of the study use data from the following EDHS questionnaires: (i) the Household Questionnaire, (ii) the Woman's Questionnaire, (iii) the Man's Questionnaire, and (iv) the Biomarker Questionnaire (when available). The indicators and proxy indicators used for the various forms of analysis were based on review of a myriad of strategy, legal, and policy documents, consultations with national stakeholders and development partners, and were also subject to data quality assessment. The proportion of missing values and whether it was possible to disaggregate the figures at regional level were one such criterion. In some instances, due to the large number of missing observations, certain measurements are only presented at national level (such as gender equality indicators by wealth quintiles), or for wider age groups (such as incidence of short stature among adolescent girls and women aged 15-49 years). In addition, because of the small subsample of women not in union with children, the regression analysis assessing the relationship between children's wellbeing and women's empowerment is restricted only to women in union who have children.

Two sets of indicators – incidence of FGM among girls aged 0-14 years and labour market outcomes among women and men – were measured using other data sources, the Welfare Monitoring Survey (WMS) and the World Bank ASPIRE database, respectively. This was due to EDHS limitations on the one hand and the importance of these measurements for Ethiopia's context on the other.

It should also be noted that trend analysis of equity was possible only for the years 2005, 2011, and 2016 as the variable wealth quintiles was not available in EDHS 2000. Also, for certain years trend analysis was not possible for several indicators as several variables were missing in the questionnaire. These included, for example, anthropometric indicators for children under five for 2005, birth registration for 2000 and 2011, attitudes towards FGM for 2011, and ownership of real estate (houses and land) for 2005 and 2000. In addition, a few indicators were available only in EDHS2016 – such as ownership and use of mobile phones and bank accounts and experience of gender-based violence - but they were included in the analysis because of their relevance to the topics covered in this report.

# Trends in gender equality

## Methodology

Given the multidimensionality of gender equality and its implications, there is no commonly used conceptual framework or composite measure that captures all its relevant aspects. Therefore, this report uses children's and women's rights as the basis for selecting parameters for the assessment with the aim of capturing (i) changes in gender equality in the last 16 years through sex-disaggregated indicators, and (ii) changes in attitudes, opinions, empowerment and relations between women and men through 'qualitative' indicators.

As a first step, a review of literature on gender equality in Ethiopia and existing national strategies, policies, and evidence from the Ministry of Women, Children and Youth (MOWCY), UNICEF, UNFPA, UN Women, and the World Bank among others was carried out. The potential indicators were then defined following the SDG targets and rights stipulated in the following international documents: the Convention on the Rights of the Child (CRC) (1989), the Universal Declaration of Human Rights (1948), the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979), the Convention on the Political Rights of Women (1953), and the Declaration on the Elimination of Violence Against Women (DEVAW) (1993).

To contextualize the selection and definition of indicators, the following national legislation and policy documents and strategies were also consulted: the National Policy on Ethiopian Women (1993); the Constitution of the Federal Democratic Republic of Ethiopia (1995); the Family Law (2000); the Criminal Law (2005); the National Gender Equality Strategy and Action Plan for Gender Equality (2006-2010); the EU+ Joint Strategy on Nutrition for Ethiopia (2016-2020); National Identity Card Registration Proclamation No. 760/2012; the Ethiopian Women Development and Change Package, the National Strategy and Action Plan on Harmful Traditional Practices (2013), the Sexual and Reproductive Health Strategy (2016-2015), the National Adolescent and Youth Health Strategy (2016-2020), the Health Sector Transformation Plan (2015/16-2019/20), the Education Sector Development Plan 2016-2020, the National Nutrition Strategy (2008), the National Nutrition Programme (2013-2015), the Seqota Declaration (2015), the Productive Safety Net Programme, the Agriculture Growth Programme II, and the National Human Rights Action Plan (2013). A workshop was organized for the same purpose on 1-2 August 2018 in Addis Ababa in which national stakeholders were consulted on parameter selection and their contextualization.

The final step involved assessing data availability in the four waves of the Ethiopian Demographic and Health Survey (EDHS) 2000, 2005, 2011 and 2016 datasets, and their quality (namely variance and share of missing values for each indicator).

**Table 1** presents the list of indicators grouped into four broad age groups: children (0-9 years), young adolescents (10-14 years), adolescents (15-19 years) and adults aged 20-49 (women) and 20-59 years (men).[12] Most of the indicators were measured for different ages and age sub-groups, depending on their availability and definition in respective EDHS waves (see Annex 1). Most focus on gender equality outcomes, but for adolescents and adults (mainly) the analysis also looked into equity (e.g. engagement in household chores as an indicator of time use), exercise of agency (e.g. decision-making), changes in attitudes, opinions, and women's empowerment, and changes in relations between women and men. Some of the indicators for assessing gender equality among children have already been covered in trend analysis in the 2018 'Multidimensional Child Deprivation' report[13] of the Central Statistics Agency (CSA) and UNICEF Ethiopia. However, their inclusion in this report

12 For several indicators (e.g. woman's short stature), disaggregation by age groups 15-17 (or 15-19 years) and 20-29/59 years was not possible due to the small size of the subsamples that yielded statistically biased results. Such indicators are presented in broader age groups, 15-49 years (for women) and 15-59 years (for men).

13 The CSA and UNICEF report 'Multidimensional Child Deprivation: First National Estimates' (2018) used UNICEF's MODA methodology to estimate multidimensional child poverty in Ethiopia. For children under five, the methodology used the dimensions of physical development (stunting), nutrition, health, water, sanitation, and housing, while for children aged 5-17 years the following dimensions were used: education, health-related knowledge, information and participation, water, sanitation and housing. Each of the dimensions was constructed using an average of 2-3 indicators (with the exception of sanitation and physical development) using a union approach, which implies that if the child is deprived in at least one of the indicators of the same dimension, she or he is considered deprived in that specific dimension.

was relevant as they have implications for gender equality and equity in the future. Many indicators on adolescent and adult women presented in this section were used to construct the Women's Empowerment Index (WEI) in the following chapter.

Several indicators were not covered in all the EDHS waves but were nonetheless used to enrich the situation analysis as they provide relevant evidence. To ensure consistency with existing literature and evidence in Ethiopia, the indicators were measured using thresholds in respective EDHS surveys.[14] To gain an insight into the distribution of gender inequality across the country, the selected indicators were disaggregated by area of residence (urban/rural) and region (data permitting).

Annex 1 includes the list of parameters used in the gender equality trend analysis along with definitions (thresholds), age groups, availability across EDHS waves, and respective SDG targets and provisions of national and international legal documents and conventions that stipulate the rights of children, adolescents, women and men.

**Table 1 Parameters used for trend analysis of gender equality and women's empowerment**

| Domain | Indicators by age group | | | |
|---|---|---|---|---|
| | Children (0-9 years) | Adolescents (10-14 years) | Adolescents (15-19 years) | Adults (20-49/59 years), some applying only to women |
| Nutrition | • Exclusive breastfeeding<br>• Early initiation of breastfeeding<br>• Minimum acceptable diet<br>• Anthropometric measures: stunting, wasting, underweight, and overweight<br>• Prevalence of anaemia | | • Nutritional status: BMI<br>• Prevalence of anaemia<br>• Short stature | • Nutritional status: BMI<br>• Prevalence of anaemia<br>• Short stature |
| Health and health-related knowledge | • Immunization coverage<br>• Healthcare seeking for most prevalent illnesses: diarrhoea, malaria, and acute respiratory infections | | • Access to adequate antenatal care services<br>• Skilled birth attendance<br>• Comprehensive knowledge about prevention and transmission of HIV/AIDS<br>• Knowledge about mother-to-child transmission of HIV<br>• HIV testing<br>• HIV prevalence | • Access to adequate antenatal care services<br>• Skilled birth attendance<br>• Comprehensive knowledge about prevention and transmission of HIV/AIDS<br>• Knowledge about mother-to-child transmission of HIV<br>• HIV testing<br>• HIV prevalence |
| Family planning | | | • Knowledge of modern contraception<br>• Unmet need for family planning<br>• Exposure to family planning information | • Knowledge of modern contraception<br>• Unmet need for family planning<br>• Exposure to family planning information |

14 For instance, the definition of skilled birth attendance was changed in 2016 to include health extension workers (HEWs), hence for this specific year the threshold will be adjusted to reflect changes in the national policies.

| Domain | Indicators by age group | | | |
|---|---|---|---|---|
| | Children (0-9 years) | Adolescents (10-14 years) | Adolescents (15-19 years) | Adults (20-49/59 years), some applying only to women |
| Education | • School attendance: pre-primary and primary education<br>• Delay in schooling | • School attendance: pre-primary and primary education<br>• Delay in schooling | • School attendance: pre-primary and primary education<br>• Delay in schooling<br>• Educational attainment – highest grade completed<br>• Literacy | • School attendance: pre-primary and primary education<br>• Delay on schooling<br>• Educational attainment – highest education level completed<br>• Literacy |
| Child protection/ Domestic violence | • Birth registration<br>• Engagement in household chores (fetching water) | • Engagement in household chores (fetching water) | • Child marriage<br>• Age at first sexual intercourse<br>• Teenage pregnancy<br>• Incidence of FGM<br>• Attitudes toward FGM<br>• Experience of GBV | • Age at first sexual intercourse<br>• Incidence of FGM<br>• Attitudes toward FGM<br>• Experience of GBV<br>• Attitudes toward wife-beating |
| Resources: Economic activity, use of time, and access to resources | | | • Employment rate<br>• Unemployment rate<br>• Labour force participation<br>• Sector of employment<br>• Vulnerable employment<br>• Type of remuneration<br>• Engagement in household chores (fetching water)<br>• Engagement of husband/ partner in household chores on daily basis<br>• Control over real estate: house and land ownership and possession of title deeds<br>• Ownership and usage of a bank account<br>• Ownership and usage of a mobile phone<br>• Exposure to media | • Employment rate<br>• Unemployment rate<br>• Labour force participation<br>• Sector of employment<br>• Vulnerable employment<br>• Type of remuneration<br>• Engagement in household chores (fetching water)<br>• Engagement of husband/ partner in household chores on daily basis<br>• Control over real estate: house and land ownership and possession of title deeds<br>• Ownership and usage of a bank account<br>• Ownership and usage of a mobile phone<br>• Exposure to media |
| Agency and autonomy | | | • Decision about own health<br>• Decision about large household purchases<br>• Decision about visiting family or relatives<br>• Decision-making power over husband's/partner's earnings<br>• Decision about use of contraceptives<br>• Control over sexual relations | • Decision about own health<br>• Decision about large household purchases<br>• Decision about visiting family or relatives<br>• Decision-making power over husband's/partner's earnings<br>• Decision about use of contraceptives<br>• Control over sexual relations |

# Findings

## Nutrition

Adequate nutrition is essential for physical and cognitive development and has an impact on many present and future wellbeing outcomes of children. Girls and boys receiving adequate nutrition have a higher chance of survival, overcoming health issues, and show improved learning abilities and educational outcomes. Among other factors, children's health and nutritional status is affected by their mothers' nutrition. Well-nourished mothers experience fewer complications during pregnancy and childbirth and have a higher chance of survival. Ultimately, improved nutritional status among women and men is paramount for a healthy and productive life.

The Government of Ethiopia has demonstrated a strong political will to tackle malnutrition in the country over the last decade. In its National Nutrition Strategy (NNS) (2008) and the National Nutrition Programme (NNP) (2013-2015) it recognizes that tackling malnutrition among children, adolescents and women requires age- and circumstance-specific interventions. Distinctions are made in policies aimed at tackling the nutritional status of infants, children under five, adolescents and women of reproductive age (including during pregnancy and lactating phase). In addition, planned interventions cover both protein energy malnutrition and micronutrient deficiency. In 2015, the efforts in this sector were taken a step further by the signing of the Seqota Declaration (2015) which ensures commitment of other sectors to eliminating stunting by 2030. Nutrition has also been mainstreamed in the Productive Safety Net Programme (PSNP) and the Agricultural Growth Programme II (AGP II). The most recent related strategy, the EU+ Joint Strategy on Nutrition for Ethiopia 2016-2020, aims to contribute to the Government of Ethiopia's efforts to reduce stunting through careful coordination of activities and the mainstreaming of nutrition into interventions which have the potential to impact food and nutrition security in general.

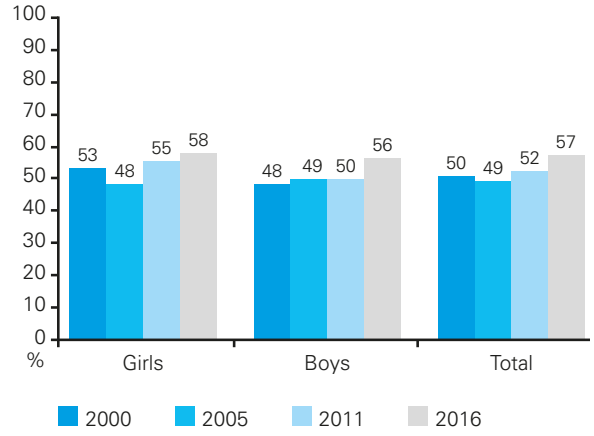
Trend analysis of the nutritional outcomes of children under five, adolescents and adults shows that significant progress has been achieved in several respects over the last 16 years, though challenges remain prevalent in the sector. Incidence of early initiation of breastfeeding has increased from 49 per cent in 2000 to 72 per cent in 2016, incidence of stunting among children under five has decreased by 12 percentage points (reaching 38 per cent in 2016), the underweight rate has nearly halved, the rate of exclusive breastfeeding reached 57 per cent (from 50 per cent in 2000), and incidence of short stature decreased from 3.7 per cent in 2005 to 2.4 per cent in 2016. However, progress has not been widespread geographically. For instance, in Afar the incidence of early initiation of breastfeeding was only 42 per cent in 2016, lower than the country average in 2000. Incidence of stunting in Amhara and Benishangul-Gumuz was significantly higher, 77 per cent and 43 per cent respectively in 2016, while Afar noted the highest incidence of underweight among children under five (36 per cent). Women residing in rural areas, Afar, Tigray, SNNPR, and Amhara are more likely to be of short stature than those in other areas.

Trend analysis of the other nutrition indicators shows that progress over the last 16 years has been very slow and even stalled. The percentage of children aged 6-23 months who received a minimum acceptable diet (MAD) (a combination of minimum meal frequency and minimum meal diversity) increased by only 2 percentage points, from 5 per cent in 2000 to 7 per cent in 2016, and there are vast geographical disparities in favour of urban areas. The nutritional status of adolescents shows a slight improvement between 2011 and 2016, but nearly a third of adolescent girls and more than half of adolescent boys (59 per cent) aged 15-19 years were undernourished in 2016 with body mass index (BMI) of less than 18.5kg/m$^2$. Incidence of undernutrition was especially high in rural areas, Afar, Tigray, and Somali. Prevalence of anaemia remains high; more than half of children under five experienced some form of anaemia, and its incidence amongst adolescent girls was twice that of boys. In Afar and Somali the difference in anaemia by gender was even wider.

### Exclusive breastfeeding

Fifty-seven per cent of children younger than 6 months were exclusively breastfed in 2016, compared to 50 per cent in 2000. The percentage of exclusively breastfed girls has been higher than that of boys across most years, but this gap narrowed in 2016. Exclusive breastfeeding incidence increased by 36 per cent in urban areas, while in rural areas improvements have been slower. Tigray and Benishangul-Gumuz had the

**Figure 1 Trends in exclusive breastfeeding of children under 6 months, by gender (%)**



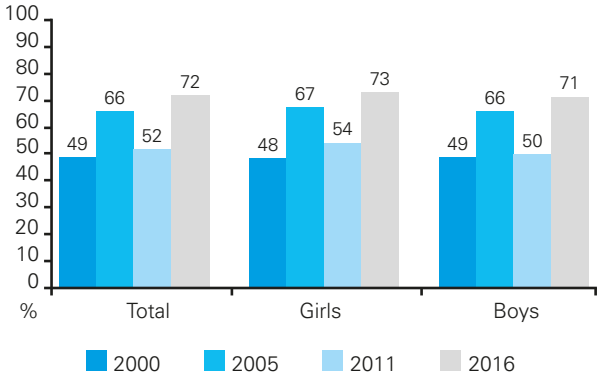

Source: Authors' calculations using EDHS data.

highest exclusive breastfeeding rates in Ethiopia – 71 per cent and 67 per cent, respectively – while Addis Ababa noted the highest increase in its incidence between 2000 and 2016, by more than 11 times (see Annex 2). Incidence of exclusive breastfeeding across wealth quintiles over the years shows that it is problematic across all wealth quintiles. Improvements in exclusive breastfeeding were notable for both the poorest and the richest wealth quintile, albeit incidence has been higher in the latter since 2005 (see Annex 3).

### Early initiation of breastfeeding

Despite fluctuations in the trend, the share of children put to breast within an hour after birth has increased significantly, from 49 per cent in 2000 to 72 per cent in 2016. While there were no significant differences across urban and rural areas or girls and boys, discrepancies across regions were significant. Early breastfeeding was initiated for only 42 per cent of children under two in Afar in 2016 compared to 90 per cent in Dire Dawa and 85 per cent in Harari. Tigray, Amhara, and Dire Dawa show the greatest improvement in this indicator over the last 16 years (see Annex 4). Trend analysis of equity in the indicator shows that there have been improvements in early initiation of breastfeeding across all wealth quintiles between 2005 and 2016, despite a decline in 2005 that might stem from survey/sampling design issues and requires further investigation. Incidence of early initiation of breastfeeding among children younger than two years of age was 76 per cent among children belonging to the richest wealth quintile and 73 per cent among children in the poorest wealth quintile (see Annex 5).

**Figure 2 Trends in initiation of early breastfeeding for children under 2 years, by gender (%)**



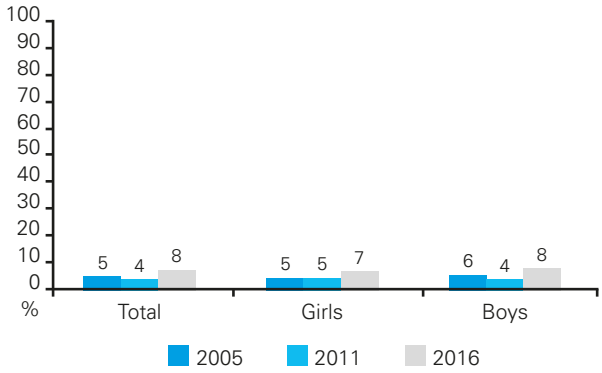

Source: Authors' calculations using EDHS data.

### Minimum acceptable diet (MAD)

In 2016, seven per cent of children aged 6-23 months in Ethiopia received a minimum acceptable diet (MAD) - a combination of minimum dietary diversity (MDD)[15] and minimum meal frequency (MMF)[16] necessary for child's growth. Improvements in this indicator during the last decade[17] have been insignificant, suggesting issues with food shortage and security, insufficiency of financial resources among households, and mothers' lack of knowledge about feeding practices. Gender differences are insignificant.

The percentage of children who received an MAD was nearly four times higher in urban areas (20 per cent) than in rural areas, while across regions the percentage is the highest in Addis Ababa (31 per cent) and Benishangul-Gumuz (16 per cent). These regions also experienced the greatest improvements in this indicator over the last decade, while progress in rural areas and most regions has been insignificant. In Afar and Harari the proportion of children receiving an MAD decreased (see Annex 6).

**Figure 3 Trends in MAD among children 6-23 months, by gender (%)**




Source: Authors' calculations using EDHS data.

15 The child eats at least 4 out of 7 food groups: (1) Grains, roots, and tubers; (2) Legumes and nuts; (3) Dairy products (milk, yogurt, cheese); (4) Flesh foods (meat, fish, poultry, and liver/organ meat); (5) Eggs; (6) Vitamin A-rich fruits and vegetables; and (7) Other fruits and vegetables.

16 Children who are breastfed are considered to receive adequate MMF if they are fed solid, semi-solid or soft foods at least twice a day (aged 6-8 months) or at least three times a day (aged 9-23 months). Children who are not breastfed are considered to meet the minimum MMF if they are fed solid, semi-solid or soft foods at least four times a day (EDHS, 2016).

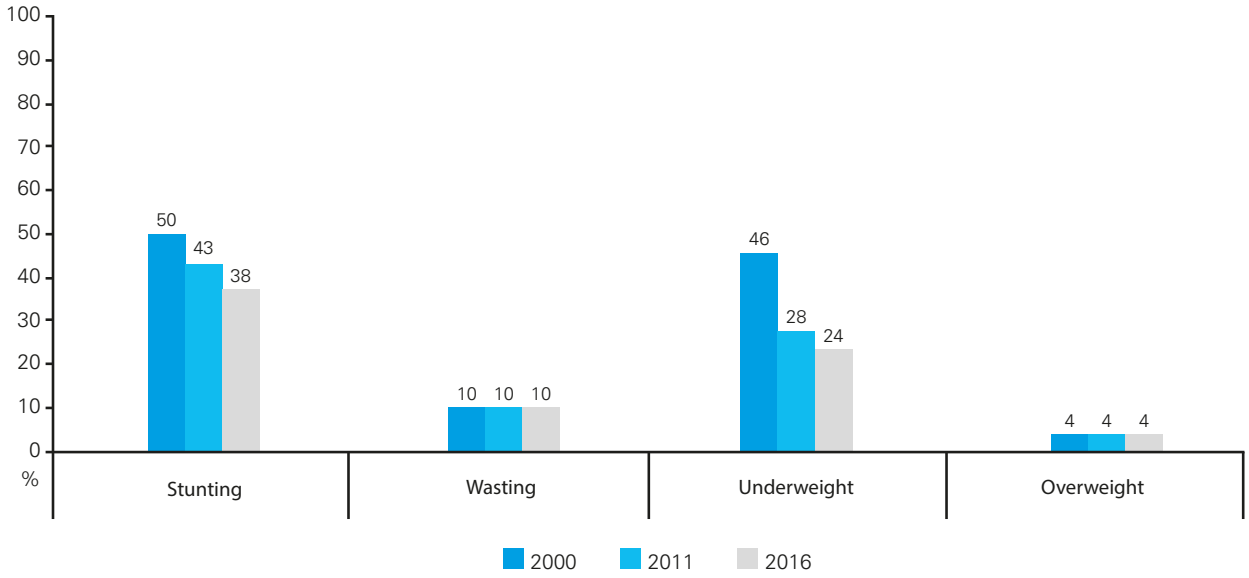
17 This indicator could not be calculated for 2000 due to missing questions in EDHS2000 dataset that were needed to construct the indicator (e.g. eggs in the same food group as meat, information on Vitamin A-rich fruits and vegetables missing, and so on).

Incidence of MAD across wealth quintiles shows that it is associated with households' financial wellbeing and that there is a large gap in equity. Only 3 per cent of children aged 6-23 months in the poorest wealth quintile were fed an MAD in 2016 compared to 17 per cent of children in the richest quintile. Trend analysis shows no improvements in equity in MAD between 2005 and 2016 (see Annex 7).

### Nutritional status of children under five

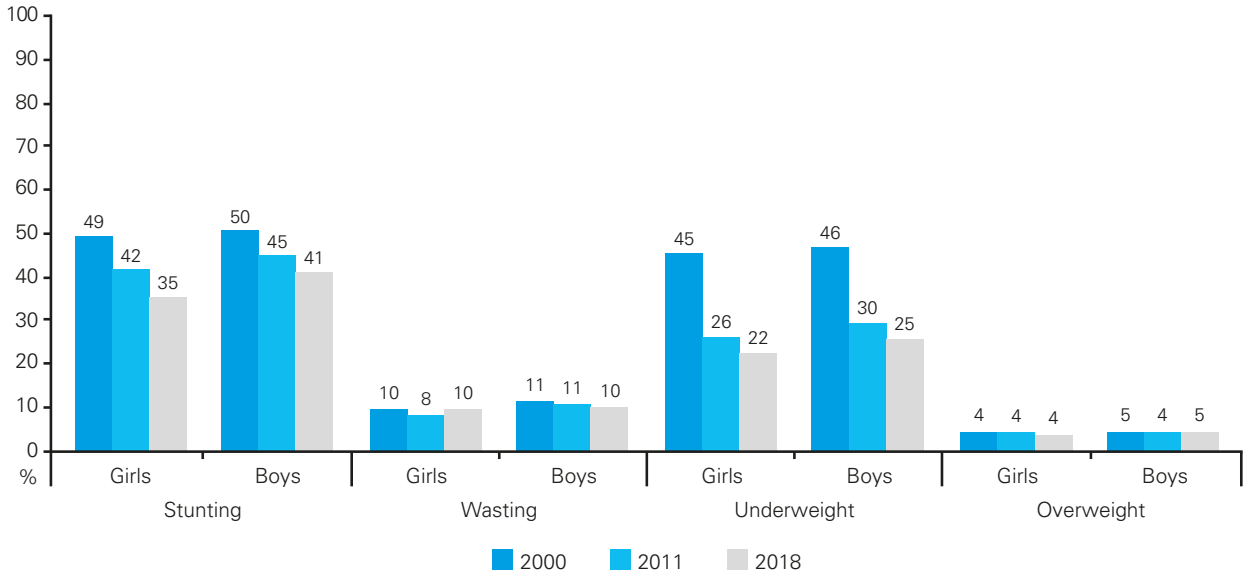
Thirty-eight per cent of children under five in Ethiopia were too short for their age (stunted) in 2016, 10 per cent were too thin for their height (wasted), 24 per cent too thin for their age (underweight), and 4 per cent too heavy for their height.

**Figure 4 Trends in stunting, wasting, underweight, and overweight among children under five (%)**




Source: Authors' calculations using EDHS data.

**Figure 5 Trends in stunting, wasting, underweight, and overweight among children under five, by gender (%)**




Source: Authors' calculations using EDHS data.

Improvements in stunting and underweight over the last 16 years have been significant:[18] the percentage of children under five who were stunted decreased by 12 percentage points, while that of underweight children nearly halved.

Trend analysis by gender shows that the decline in stunting and underweight rates has been sharper among girls. The percentage of stunted girls in 2016 (35 per cent) was significantly lower than that of boys (41 per cent).

Incidence of stunting and underweight has been decreasing consistently since 2000 in both urban and rural areas and across regions. The steepest decline in stunting occurred in Somali and Tigray, and of underweight in SNNPR (see Annex 8).

Incidence of stunting, wasting, and underweight across wealth quintiles indicates that nutritional outcomes among young children are associated with households' financial wellbeing. The proportions of children in the poorest wealth quintile who were stunted or underweight in 2016 – 44 per cent and 31 per cent respectively – were significantly higher than those of children in the richest wealth quintile: 25 per cent and 15 per cent respectively. Changes in equity in stunting, wasting, and underweight between 2011 and 2016 have not been consistent across all wealth quintiles (see Annex 9).

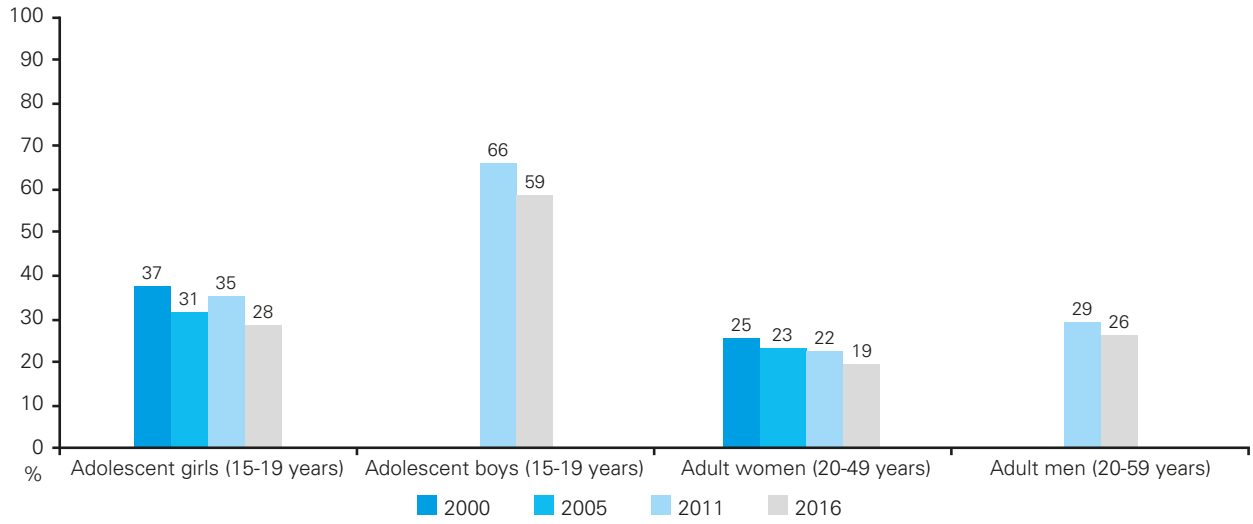
### Nutritional status of adolescents and adults

With a BMI of less than 18.5, 28 per cent of adolescent girls and 19 per cent of adult women in Ethiopia were undernourished (too thin for their age) in 2016. More than twice as many adolescent boys were undernourished in the same year, while for adults this gap was narrower. Trend analysis shows improvements in nutrition, albeit at a slow pace.[19]

The percentage of undernourished adolescents and adults was significantly higher in rural areas and in Afar, Tigray, and Somali in 2016. Over the 16-year period the percentage of adolescent girls who were underweight decreased most significantly in rural areas and Benishangul-Gumuz, while that of adult women did so in urban areas and the Somali region (see Annex 10).

Differences in the rate of undernutrition among adolescents and adults across wealth quintiles shows that it is associated with the financial wellbeing of households and suggests equity issues across the 11-year-period under consideration. Twenty-three per cent of adolescent girls in the richest quintile were undernourished in 2016, compared to 33 per cent if their peers belonging to the poorest wealth quintile (see Annex 11).

**Figure 6 Trends in undernutrition (BMI<18.5) of adolescents and adults, by gender (%)**




Source: Authors' calculations using EDHS data.

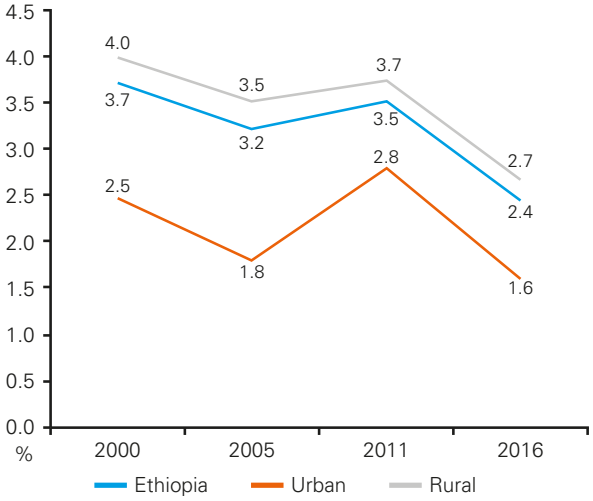
18 Figures were not presented for 2005 because of missing data for more than 50 per cent of observations.

19 EDHS 2005 and EDHS 2000 did not collect anthropometric data on adolescent boys and men.

### Short stature

Less than three per cent of girls and women in Ethiopia aged 15-49 years were of short stature (shorter than 145 centimetres) in 2016. Trend analysis shows a decline in the rate since 2000 despite fluctuation in rural areas between 2005 and 2011. Women residing in rural areas, Tigray, SNNPR and Amhara are more likely to be of short stature (see Annex 12). Likewise, women belonging to the poorer wealth quintiles are more likely to be of short stature than women in the middle, richer, and richest wealth quintiles, and the level of inequity has remained unchanged between 2005 and 2016 (see Annex 13).

**Figure 7 Trends in short stature among girls and women (age 15-49 years), by area of residence (%)**




Source: Authors' calculations using EDHS data.

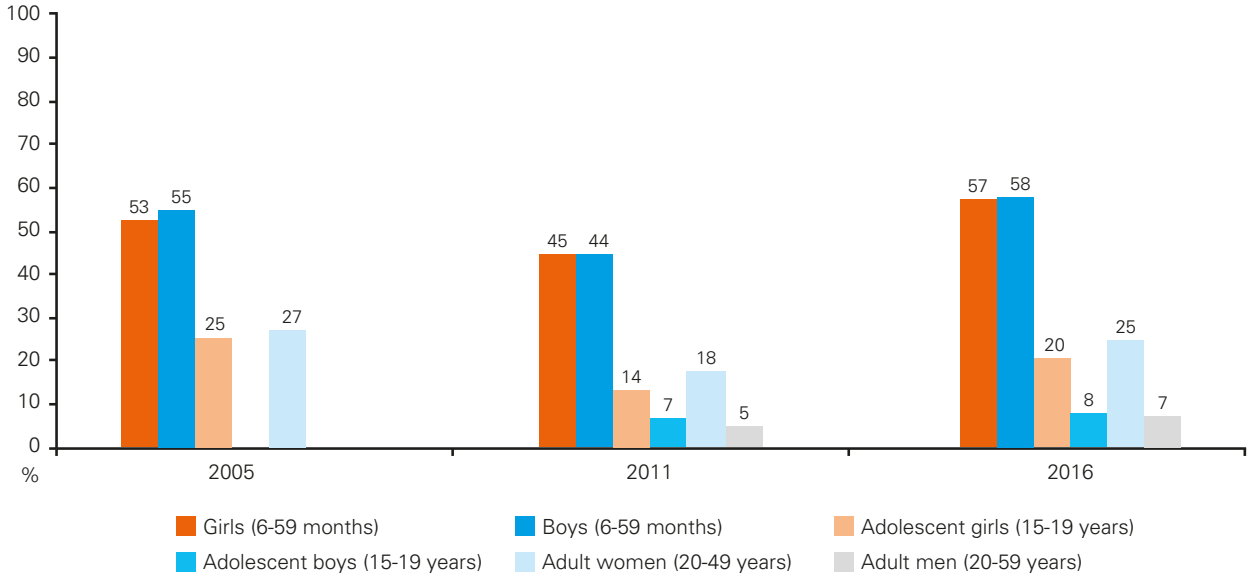
### Anaemia

Nearly 60 per cent of girls and boys under five in Ethiopia were anaemic in 2016. Although prevalence was lower among adolescents and adults, gender disparities are vast for these two age groups. Adolescent girls were more than twice as likely to be anaemic as adolescent boys, while for adults, likelihood was nearly three times higher among women.

Anaemia prevalence in 2016 was especially high among children living in rural areas and in Somali. The largest gender inequalities were noted among adolescents in Afar and adults in Somali (see Annex 14).

Prevalence of anaemia has been fluctuating in Ethiopia over the last decade, reaching the highest rates for children and the largest gender disparities among adolescents and adults in 2016. Even though iron deficiency is assumed to cause roughly 50 per cent of anaemia cases,[20] the figures for Ethiopia suggest that there have

**Figure 8 Trends in prevalence of iron deficiency/anaemia, by age and gender (%)**




Source: Authors' calculations using EDHS data.

20 According to WHO's 2015 report 'The global prevalence of anaemia in 2011', iron deficiency is estimated to cause 50 per cent of cases of anaemia worldwide and is ranked the main contributor to the condition. Other causes include deficiency of other micronutrients such as folate, riboflavin, vitamins A and B12, acute and chronic infections (e.g. malaria, tuberculosis, etc.), and other inherited or acquired disorders (WHO, 2015, p. 1).

been major issues with availability and quality of food, provision of micronutrient supplements, and access to healthcare over the last decade.

Incidence of anaemia across wealth quintiles hints to issues of persisting inequity since 2005, especially among children and adults. The share of children aged 6-59 months who suffered from iron deficiency in 2016 was 68 per cent for children in the poorest wealth quintile and lower for each subsequent wealth quintile, reaching 48 per cent among children from the richest one (see Annex 15).

## Health and health-related knowledge

Along with interventions in nutrition and WASH, utilization of curative and preventive health care services has determinantal effects on young children's survival, development, and other wellbeing outcomes that extend into the future. Mothers' access to professional medical services during pregnancy, at delivery and after birth are also imperative, as is their health-related knowledge.

Expanding coverage of children's immunization, antenatal and postnatal care services and skilled birth attendance, and enhancing early detection and treatment of the most prevalent illnesses among children under five are among the most commonly prioritized interventions in the health sector in Ethiopia. Provision of health-related information and education for adolescent girls and women is often placed at the core of health and multisectoral strategies for the multitude of effects that it has on child and maternal survival, nutritional and health outcomes of children and women, education and protection outcomes of adolescents, and ultimately on enhancing gender equality.

The Growth and Transformation Plan II (GTPII) 2015/15-2019/20 recognizes that improving health outcomes is key to unlocking the potential for growth in Ethiopia through provision of equitable, accessible, and quality health services and enhancing public awareness. Moreover, improving health status and enhancing community ownership and equitable access to quality health services are among the strategic objectives of the Health Sector Transformation Plan (HSTP) 2015/16-2019/20. Specifically, the key components include the Health Extension Programme and scaling up health interventions in reproductive, maternal, new-born, and child health, adolescent health, nutrition services, and hygiene and environmental health.

Trend analysis shows notable progress in increase in coverage of maternal health services and immunization over the last 16 years. Between 2000 and 2016, coverage of adequate ANC services increased from 10 per cent to 32 per cent, incidence of skilled birth deliveries from 6 to 33 per cent, and the percentage of fully immunized children under five reached 39 per cent from 17 per cent in 2000. Health-seeking behaviour also saw a slight improvement: treatment was sought for 27 per cent of children under five who suffered diarrhoea, fever or a cough in the two weeks preceding the survey compared to 17 per cent in 2000. In addition, prevalence of HIV testing increased by more than nine times among both women and men, from 5 per cent to 44-48 per cent.

Despite the progress achieved, the coverage rates of basic healthcare services described above are low given their detrimental effects on survival and health of children and mothers. Geographical disparities are very wide, highlighting issues with service availability in some regions. ANC and immunization coverage in urban areas was twice that in rural areas, while skilled birth coverage was three times higher. Somali and Afar had the lowest coverage across all three indicators. Trends in health-related knowledge – HIV/AIDS transmission and prevention and MTCT of HIV – shows meagre progress and widening gender inequalities. Twice as many men (38 per cent) as women (19 per cent) had comprehensive knowledge about HIV/AIDS transmission and prevention in 2016; the gap was also wide among adolescents (37 per cent of boys and 24 per cent of girls). The gap was even wider in Harari, Dire Dawa, Gambella, Amhara, and Benishangul-Gumuz.

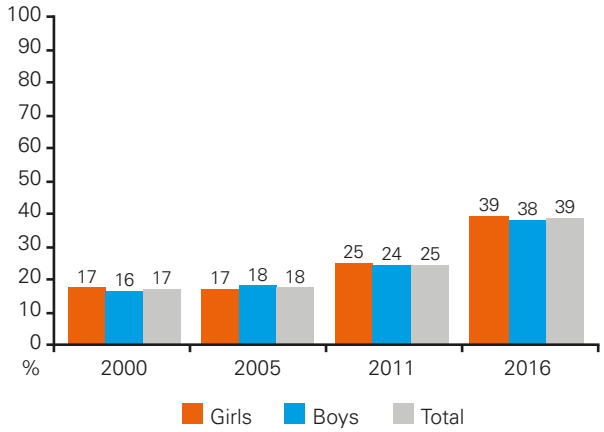
### Immunization

Thirty-nine per cent of girls and boys under five in Ethiopia were fully immunized in 2016.[21] Coverage of full immunization at national level more than

21 Children aged 11-59 months are considered to be fully vaccinated if they have completed all of the following vaccines: BCG, 3 doses of DPT-HepB-Hib (pentavalent), 3 doses of polio, and measles. Children younger than 11 months are considered to be fully vaccinated if they completed vaccination that corresponds with their age in the Ethiopian National Vaccination Schedule: BCG - age of 1 month; DPT-HepB-Hib, dose 1 – age 3 months; DPT-HepB-Hib, dose 2 – age 4 months; DPT-HepB-Hib, dose 3 – age 5 months; Polio1 – age 3 months, Polio2 – age 4 months, Polio3 – age 5 months; measles – 10 months. The threshold for immunization in each of these vaccines is set at one month higher than the national schedule, taking into account that the child must be healthy to be vaccinated.

doubled between 2000 and 2016; in rural areas it more than tripled, whereas in Benishangul-Gumuz it increased by nearly five times. Even though there was no significant gender inequality in immunization in 2016, geographical disparities were drastic. Only 36 per cent of children in rural areas were fully immunized, compared to 66 per cent of children in urban areas. Afar had the lowest immunization coverage in 2016, at 16 per cent, while in Addis Ababa most children under five (90 per cent) were fully immunized (see Annex 16).

**Figure 9 Trends in immunization, children under five, by gender (%)**




Source: Authors' calculations using EDHS data.

Immunization in Ethiopia is associated with the mother's educational attainment and wealth quintiles.[22] Incidence of full vaccination increases consistently with each additional level of education attained ranging from 26 per cent for children whose mother has not completed any formal education to 72 per cent for children whose mothers have completed university or higher education. In 2016, children from the richest wealth quintiles were nearly three times more likely to be fully immunized (coverage at 58 per cent) than their peers from the poorest wealth quintiles (coverage at 19 per cent) (CSA, 2017, p.172).

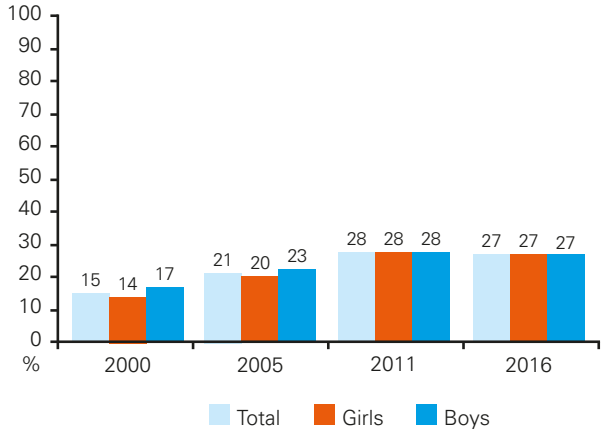
### Healthcare seeking behaviour

Twenty-seven per cent of children under five who had an illness (diarrhoea, fever or cough) in the two weeks preceding the survey in 2016 were taken to a professional healthcare provider[23] in the public, private or non-governmental sector for advice or treatment. Healthcare-seeking behaviour improved between 2000 and 2011 but then stagnated.

The gender gap in healthcare seeking, albeit small, closed in 2011. Geographically, healthcare-seeking behaviour has improved in rural areas, Dire Dawa and SNNPR, hinting to improvements in availability of healthcare services. Figures for Addis Ababa on the other hand show the opposite trend.[24] In 2016, health seeking incidence was lower in rural areas, Amhara, Oromia and Tigray than in the other regions (see Annex 17).

Professional health care seeking is associated with financial wellbeing of households. In 2016, 36 per cent of children under five from the richest wealth quintiles were treated by professional medical staff when ill, compared to 21 per cent of children in the poorest wealth quintile; though there has

**Figure 10 Trends in healthcare seeking for children under five, by gender (%)**




Source: Authors' calculations using EDHS data.

22 The figures were obtained from the CSA EDHS 2016 report and refer to all age-appropriate vaccinations for children aged 12-35 months.

23 Advice or treatment from pharmacy, shop, drug vendor, market, and traditional practitioner excluded.

24 It should be noted that treatment and advice sought from pharmacies, shops, and drug vendors was not included in the definition, therefore the figures do not imply that the abovementioned illnesses and/or conditions were not treated. Low rates of healthcare seeking in certain areas and regions such as Addis Ababa may be attributed to improvements in health-related knowledge rather than barriers to accessibility and/or availability of services.

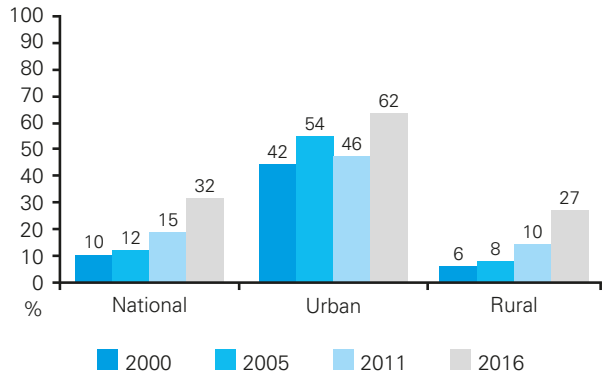
been a narrowing in inequity since 2005 (see Annex 18). These figures indicate that utilizing healthcare services has financial implications for households, including both direct costs of accessing healthcare services and associated costs such as transportation. This topic requires further investigation for informed policymaking.

## Access to adequate antenatal care (ANC) services

In 2016, 32 per cent of pregnant women aged 15-49 years had access to adequate ANC services – defined as a minimum of four ANC visits provided by a skilled health professional.[25] Coverage of ANC services more than tripled across the country since 2000, and expanded by more than four times in rural areas. ANC coverage among girls and younger women, aged 15-19 years, was slightly lower (at 28 per cent) in 2016, but this was a significant improvement from 2011 when coverage stood at 14 per cent. In Harari and Somali, progress was slower, and Somali, Oromia, and Afar had the lowest ANC coverage in 2016. In urban areas coverage was more than twice that in rural areas (see Annex 19).

Differences in ANC coverage rates across wealth quintiles suggest serious issues with equity. In 2016, 57 per cent of women aged 15-49 years from the richest quintile utilized adequate ANC services compared to only 20 per cent of women from the poorest quintile. Trend analysis shows that inequity in this service has widened between 2005 and 2016, as progress in ANC coverage in the poorest wealth quintile has been insignificant (see Annex 20).

**Figure 11 Trends in access to ANC services, women aged 15-49 years (%)**



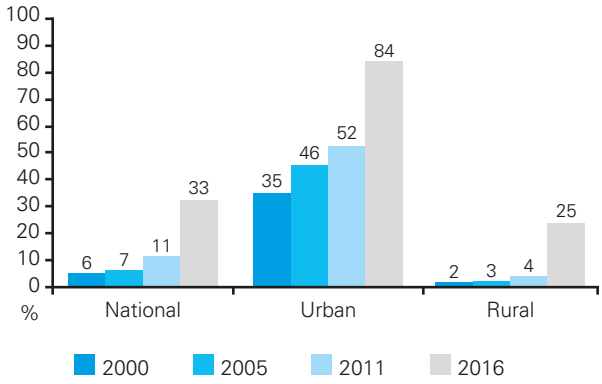

Source: Authors' calculations using EDHS data.

## Access to skilled birth attendance

Coverage of skilled birth delivery has also expanded significantly over the 16-year period. The percentage of women who were assisted by a skilled attendant[26] in the last birth increased from 6 per cent in 2000 to 33 per cent in 2016. Progress in expanding coverage of skilled birth attendance was even more remarkable among girls and women aged 15-19 years, reaching 39 per cent in 2016 from 10 per cent in 2000. Across regions, improvements have been notable in most except for Afar and Somali, but the disparities remain wide. Less than 20 per cent of women in Afar and Somali had access to skilled birth delivery in 2016, compared to 96 per cent of women residing in Addis Ababa (see Annex 21).

Differences in skilled birth delivery coverage across wealth quintiles indicate serious issues with equity. In 2016, 74 per cent of women aged 15-49 years from the richest quintile delivered their children with a skilled birth attendant, compared to only 13 per cent of women from the poorest quintile. Trend analysis shows that inequity in this service has widened between 2005 and 2016; progress in coverage of skilled birth delivery has been significantly higher for the richest wealth quintile (see Annex 22).

**Figure 12 Trends in access to skilled birth attendance, women aged 15-49 years (%)**




Source: Authors' calculations using EDHS data.

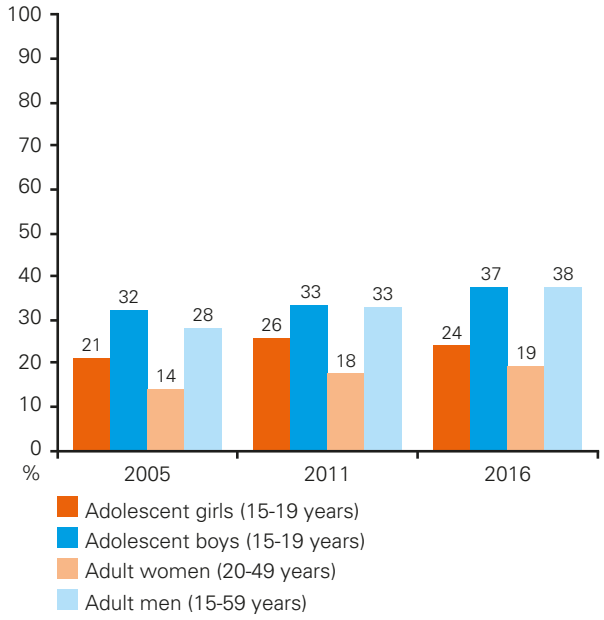
25 The EDHS 2016 definition of health professionals includes: doctors, nurses, midwives, health professionals, and Health Extension Workers. See Annex 1 for definitions in the other EDHS waves.

26 *Ibid.*

## Comprehensive knowledge about HIV/AIDS

Gender inequality in comprehensive knowledge about HIV/AIDS[27] prevention and transmission has widened over the last decade[28] among adolescents and especially adults. The share of adolescent girls (24 per cent) and adult women (19 per cent) with comprehensive knowledge about HIV/AIDS in 2016 was significantly smaller than that of their male counterparts. Trend analysis shows that improvements in this area over the last decade have only been significant for adult men aged 20-59 years.

**Figure 13 Trends in knowledge about HIV/AIDS prevention and transmission, adolescents and adults, by gender (%)**




Source: Authors' calculations using EDHS data.

Gender disparities in knowledge of HIV/AIDS were widespread across regions in 2016. A significantly higher percentage of adolescent boys in Harari and Dire Dawa and adult men in Dire Dawa, Gambella, and Amhara had comprehensive knowledge about prevention and transmission of HIV/AIDS than their female counterparts. Harari and Amhara also had high inequality in health-related knowledge in 2005, showing no improvements over the decade. It must be emphasized that knowledge about HIV/AIDS remains highly problematic for the region of Somali, where the rates were critically low for both adolescents and adults regardless of their gender (see Annex 23).

Figures for comprehensive knowledge on HIV/AIDS across wealth quintiles show that it is associated with financial wellbeing, as households in the rich wealth quintiles typically have improved access to information and education. Only 10 per cent of adolescent girls from the poorest quintile had comprehensive knowledge of HIV/AIDS in 2016, compared to more than 38 per cent of their peers in the richest wealth quintile. The extent of inequity was also high among adolescent boys, 29 per cent in the poorest compared to 49 per cent in the richest wealth quintiles (see Annex 24).

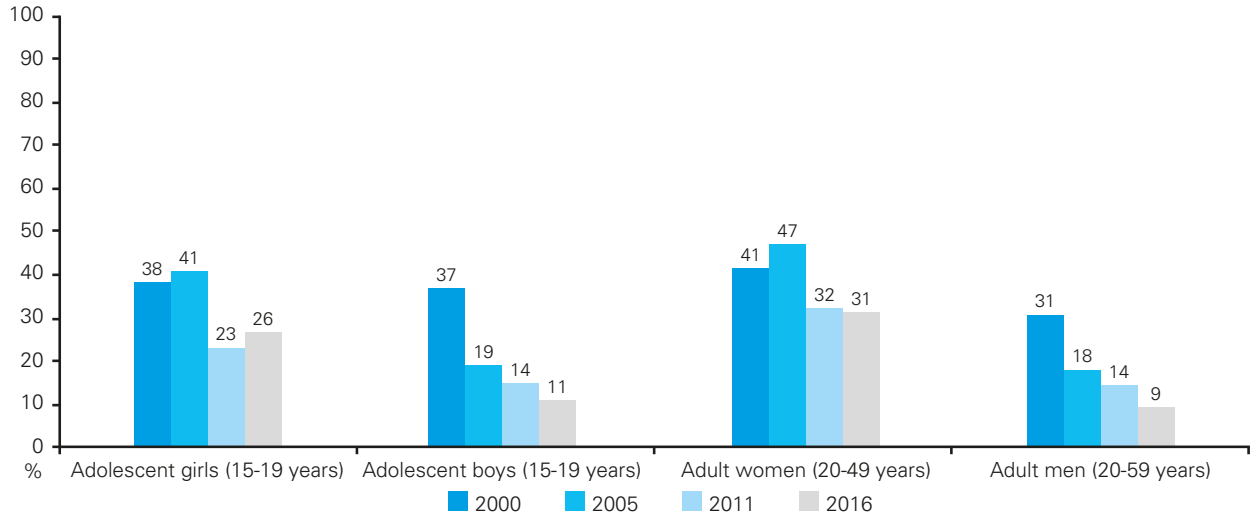
## Knowledge about mother-to-child transmission (MTCT) of HIV

The gender gap in knowledge about risk of HIV transmission from mother to child during pregnancy, at childbirth, and through breastfeeding has been widening over the last 16 years, especially among adults. The percentage of adolescent boys and adult men who were aware of risks of MTCT of HIV has fallen consistently since 2000, reaching 11 per cent and 9 per cent respectively in 2016. The rate of adolescent girls and adult women that possessed this knowledge reached the lowest level and has stalled since 2011. Gender inequalities in knowledge of MTCT of HIV are wide across most regions with exception of Addis Ababa and Dire Dawa, while in Afar the gap has been consistently wide since 2000 (see Annex 25). Further research is necessary to gain an insight in this decreasing trend.

27 Comprehensive knowledge includes: (i) Having heard about HIV and AIDS; (ii) Knowing that HIV transmission can be prevented by having sex with one partner who has no other partners or by always using condoms during sex; (iii) Rejecting any of the two most common misconceptions about HIV transmission: that HIV can be spread by mosquito bites or by sharing food with an HIV-infected person; or (iv) Knowing that a healthy-looking person can have HIV.

28 Indicator missing for 2000 because EDHS 2000 does not cover related questions on the main misconceptions about HIV transmission.

**Figure 14 Trends in MTCT knowledge, adolescents and adults, by gender (%)**



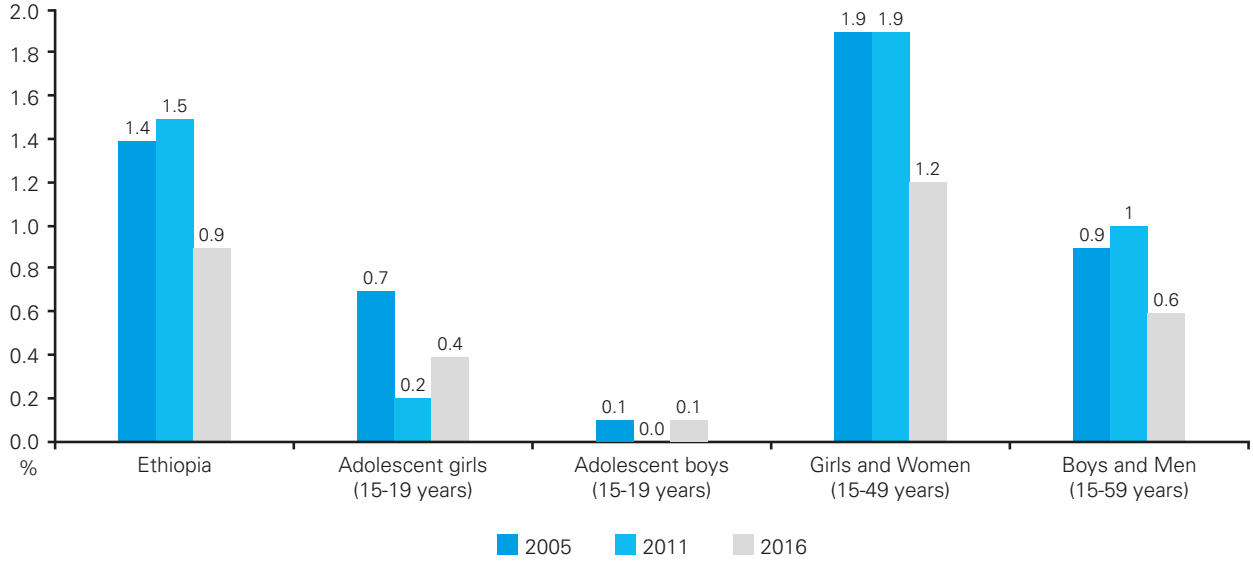

Source: Authors' calculations using EDHS data.

## Prevalence of HIV

Trend analysis of HIV prevalence shows that consistently since 2005 twice as many women of reproductive age than men have been living with HIV. Even though the data show a large gender inequality and that HIV prevalence has decreased over the last 11 years, the results should be interpreted with caution, as they were dependent on the willingness of the respondents to be tested during the survey.

HIV prevalence in urban areas has consistently been higher than in rural areas, and was seven times higher in 2016, at 2.9 per cent and 0.4 per cent respectively. Over the last 11 years, prevalence has been highest in Addis Ababa, Gambella, and Harari across regions (see Annex 26).

**Figure 15 Trends in HIV prevalence, by gender (%)**




Source: Authors' calculations using EDHS data.

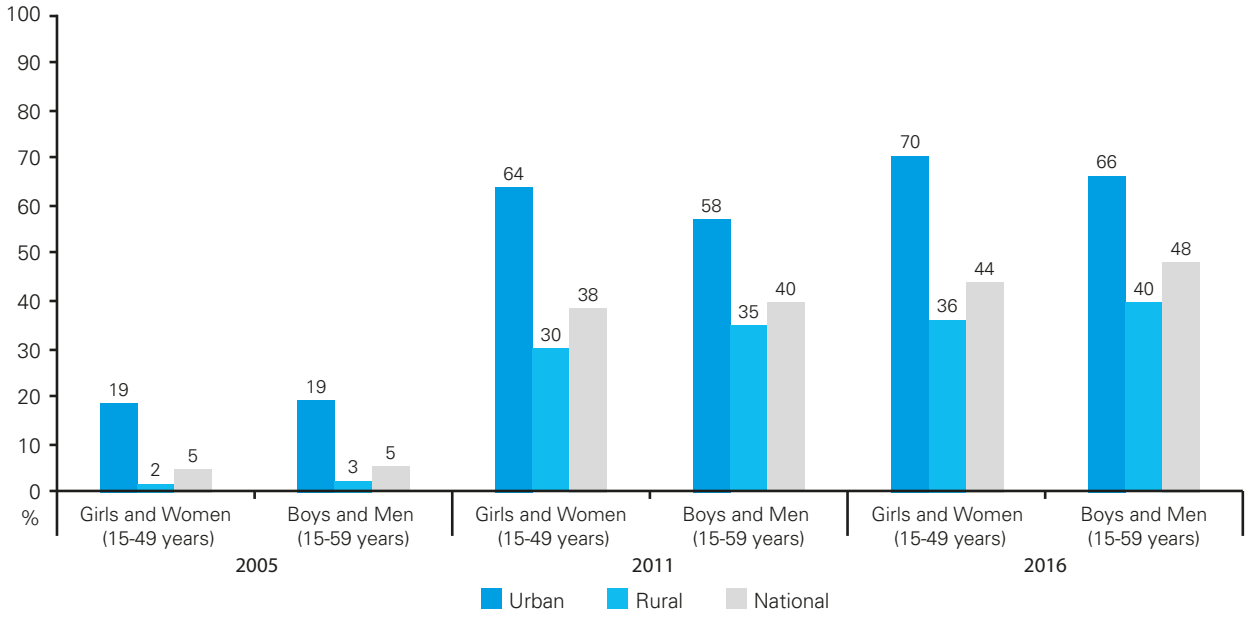
## HIV testing

There have been major improvements in incidence of HIV testing among both women and men over the last decade.[29] The percentage of women of reproductive age tested for HIV increased from 5 per cent in 2005 to 44 per cent in 2016, while that of men reached 48 per cent. The percentage of men ever tested for HIV was slightly higher than that of women in 2016. This result is counterintuitive given that women access health providers more frequently for maternal services or for younger children as primary caretakers. The difference is however not widespread across regions. In Tigray and especially Harari, the percentage of women tested for HIV was significantly higher than that of men in 2016. In Afar the opposite was the case (see Annex 27 and Annex 28). The annexes show that incidence of HIV testing among adolescents in 2016 was higher among girls across all regions with the exceptions of Somali, SNNPR, and Afar. One possible explanation for this difference could be that women access healthcare services more frequently as the main caregivers of children, and possibly also during pregnancy.

## Family planning

Several policy and strategy documents of the Federal Democratic Republic of Ethiopia underpin the importance of realization of sexual and reproductive rights of women, as a precondition for improving their health outcomes and broader socio-economic inclusion. The National Reproductive Health Strategy (2006-2015) (among others) aimed to achieve the following objectives: *"reduce unwanted pregnancies and enable individuals to achieve the desired family size"* by creating acceptance and demand for family planning, and *"enhance the reproductive health and wellbeing of the country's diverse populations of young people"* by tailoring interventions to their needs based on age, gender, geographical location and other characteristics. In addition, the National Adolescent and Youth Health Strategy (2016-2020) places family planning at the forefront of its outcome targets to reduce unmet need for contraception to 10 per cent by 2020 and to increase the contraceptive prevalence rate among female youth to 30 per cent (FDRE Ministry of Health 2016, p. 21).

**Figure 16 Trends in HIV testing, by gender and area of residence (%)**




Source: Authors' calculations using EDHS data.

29 This indicator could not be calculated for 2000 because the question was not asked in EDHS2000.

Trend analysis shows that there has been progress in family planning over the last 16 years. Prevalence of knowledge about modern contraception increased significantly among adolescents, from 68-70 per cent in 2000 to 95-97 per cent in 2016. The incidence of women with an unmet need for family planning – spacing or limiting the number of births – fell from 36 per cent in 2000 to 22 per cent in 2016. However, progress has not been consistent across all geographical areas. Twice as many women in rural areas (25 per cent) had an unmet need for family planning in 2016, compared to 11 per cent of women in urban areas, while across regions incidence was the highest in Gambella and Oromia. Exposure to family planning information, on the other hand, showed a regressive trend between 2011 and 2016. In addition, adolescents residing in Afar and especially in Somali had significantly lower likelihood of exposure to family planning information than all the other regions.

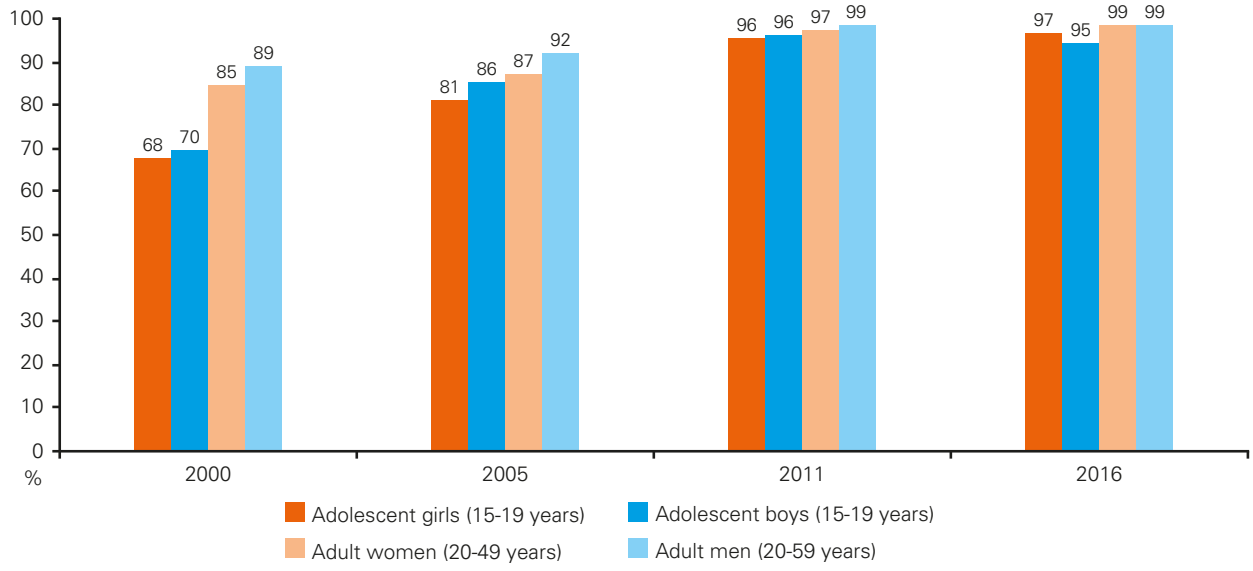
## Knowledge about modern contraception methods

In 2016, most adolescents (95-97 per cent) and adults (99 per cent) in Ethiopia knew about at least one method of modern contraception. Knowledge about contraception has expanded significantly among adolescents since 2000 when incidence rates were 68 per cent among girls and 70 per cent among boys. Afar, Somali, Gambella, Benishangul-Gumuz and SNNPR show the greatest progress in this indicator over the last 16 years. However, the percentage of adolescents and adults with knowledge about modern contraception continued to be lowest in Somali in 2016, especially among adolescent girls (see Annex 29). Figures on knowledge about modern contraception across wealth quintiles in 2005, 2011, and 2016 show that Ethiopia has achieved significant progress in reducing inequity in this indicator over the 11-year period. In 2016, 88 per cent of adolescent girls and 89 per cent of adolescent boys from the poorest quintile had knowledge about at least one modern contraception method compared to 99 per cent and nearly 100 per cent of adolescent girls and boys from the richest quintile respectively (see Annex 30).

## Unmet need for family planning

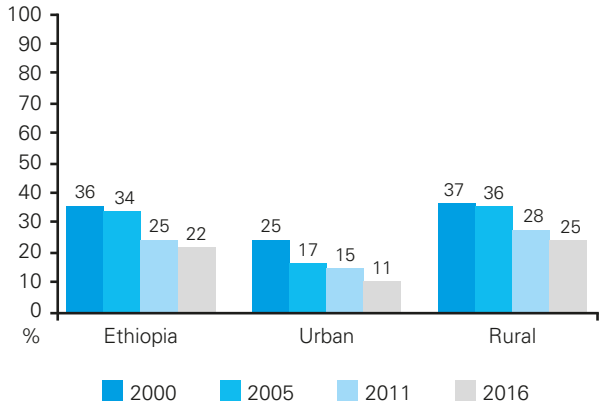
Ethiopia has made significant progress in family planning – in terms of birth spacing and limiting – over the last 16 years. Twenty-two per cent of women of reproductive age (15-49 years) had an unmet need for family planning in 2016 compared to 36 per cent in 2000. However, progress has not been consistent across all areas. The likelihood

**Figure 17 Trends in knowledge of modern contraception methods, per cent of adolescents and adults who know at least one method, by gender (%)**




Source: Authors' calculations using EDHS data.

**Figure 18 Trends in having an unmet need for family planning, women aged 15-49 years, by area of residence (%)**




Source: CSA EDHS reports 2000, 2005, 2011, and 2016.

of an unmet need for family planning[30] was more than twice as high in rural areas as in urban areas in 2016, at 25 per cent and 11 per cent respectively. Amhara and SNNPR have achieved the greatest progress in this area over the last 16 years, while women residing in Oromia, Gambella and rural areas had the highest likelihood of having an unmet need for family planning in 2016 (see Annex 31). With the exception of women aged 20-24 years and 45-49 years, the percentage of adolescents with an unmet need for family planning (21 per cent) was lower than those of women in other age groups (CSA 2017, p.117). Across wealth quintiles, having an unmet need for family planning was the highest among the poorest and the poorer[31] wealth quintiles (22 per cent), and significantly lower only for the richest wealth quintile (at 10 per cent). Trend analysis shows that inequity in this indicator of family planning has increased between 2005 and 2016 (see Annex 32).

## Exposure to family planning information

The effectiveness of disseminating family planning knowledge and education through various sources of information has been modest over the last 16 years. In 2016, less than half of adolescents – 49 per cent of girls and 44 per cent of boys – stated that they had heard of/read about family planning over the last few months from at least one source of information: radio, television, newspaper/magazine, pamphlet, mobile phone message, Internet or participation in community conversations.[32] Exposure to family planning messages was higher among adult women (55 per cent) and men (65 per cent). Exposure to family planning information among both adolescents and adults remained a challenge in rural areas, Somali and Afar in 2016.

Over the 16-year period, exposure of adolescents and adult women to family planning information improved significantly in Harari and Benishangul-Gumuz, while rural areas and Amhara saw the highest increase in incidence among adult men. The opposite took place in Tigray, urban areas and Somali (see Annex 33).

These figures should be interpreted with caution as (i) the target age sub-groups and channels of family planning campaigns and communication have undergone changes; and ii) patterns of dissemination and extraction of information have changed with penetration of mobile phones and the Internet.

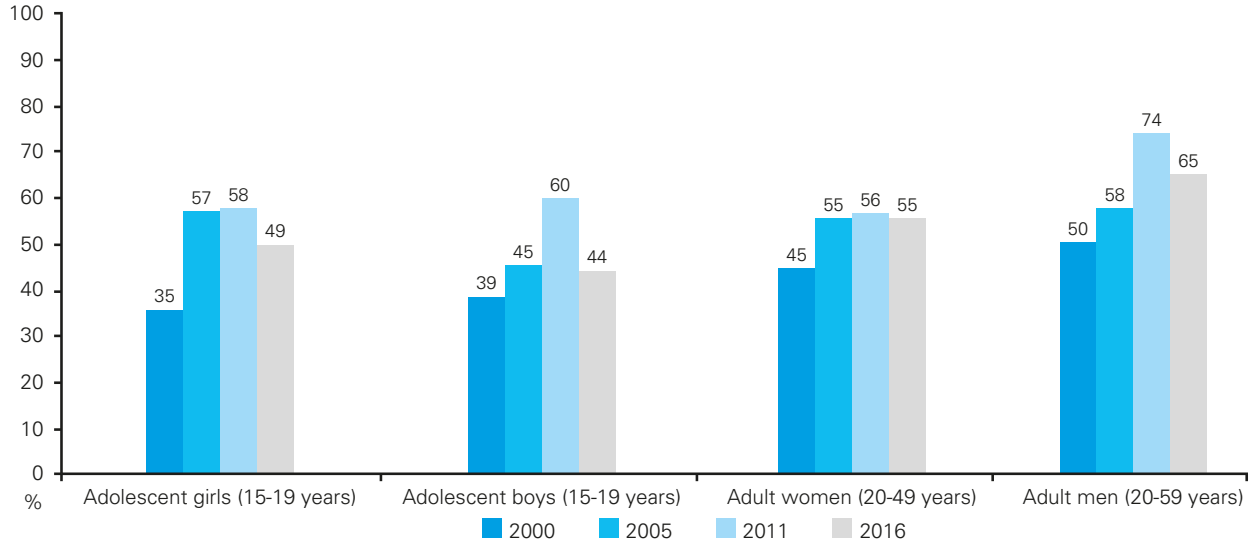
Exposure to family planning information and messages across both sexes and age groups appears to be associated with households' financial wellbeing, as the latter is also associated with higher educational attainment and enables possession of information devices. In 2016, only 31 per cent of adolescent girls from the poorest quintile had access to family planning information compared to 72 per cent of their counterparts in the richest quintile. Inequity in access to family planning messages has remained high since 2005 (see Annex 34).

30 The woman (1) is not pregnant and not postpartum amenorrhoeic and considered fecund and wants to postpone next birth for two or more years or stop childbearing altogether but not using a contraceptive method; (2) has a mistimed or unwanted current pregnancy; or (3) is postpartum amenorrhoeic and her last birth in the last two years was mistimed or unwanted.

31 Here and subsequently, the "poorer" quintile is the second quintile, between the poorest and the middle quintiles. Similarly, the "richer" quintile is the fourth quintile, between the middle and the richest quintiles.

32 For 2000, 2005, and 2011 mobile phone messages and Internet not included in the list of information sources.

**Figure 19 Trends in exposure to family planning, adolescents and adults, by gender (%)**




Source: Authors' calculations using EDHS data.

## Education

Education is widely recognized as a fundamental human right, and an entry point across strategies and action plans for enhancing gender equality and unlocking potential for economic growth. Educational attainment and especially cognitive skills are positively associated with lifetime earnings of the individual and broader gains in the country's economy.[33] It is therefore paramount that interventions in the education sector are not geared only towards education quantity (attendance rates and educational attainment), but also focus on interventions to improve the quality of education.

The benefits of education extend to improved outcomes in nutrition, hygiene, health, and child protection. The likelihood of child marriage, early childbearing and exposure to various forms of gender-based violence and other risks is significantly lowered by education. Education enhances women's agency in exercising other fundamental rights, such as decisions about their fertility and their participation in the political, social, economic, and cultural spheres.

Investment in early childhood care and education (ECCE) has received dedicated attention over the last couple of decades because of the positive effects that it has on primary and secondary school completion rates, labour market participation of mothers, increasing intergenerational social mobility, enhancing gender equality, and gains for society at large.

The importance of investing in education at all levels is enshrined in several of Ethiopia's national development and sector strategies. The main objective of the Education Sector Development Plan in the GTP II 2015/16-2019/20 is to *"ensure quality, fair and accessible education and training system that enhances equality, relevance, equity, and access at all levels"*. The vision of the Gender Strategy for the Education and Training Sector (2015) envisages ensuring gender equality at all levels of education. In addition, the Education Sector Development 2015/16-2019/20 lists the following among its five key priorities: (1) *Provision of equal opportunities for all, with special attention to disadvantaged groups, and (2) Delivery of quality education that meets the diverse learning needs of all children, youth, and adults* (Federal Ministry of Education Ethiopia 2015, p.33).

Ethiopia has made remarkable progress in the education sector over the last 16 years, especially in increasing school attendance rates at all levels and narrowing the gender gap in enrolment. Attendance rates have increased significantly for pre-primary, primary and secondary education. The gender gap in primary school enrolment has been eliminated, and the primary school attendance rate of young adolescent girls (10-14 years) exceeded that of their male peers: 80 per cent and 78 per cent respectively. The gender gap in secondary

33 Hanushek and Wößman (2007) find that a one standard deviation increase in mathematics performance at the end of secondary school translates into 12 per cent higher yearly earnings, and that increasing PISA scores in 31 countries analysed amounted to a 2.2-percentage-point GDP growth (Hanushek and Wößman, 2007).

school attendance rates has narrowed to a 5-percentage-point difference (higher for boys). The proportion of children who attended the right grade for their age nearly doubled from 31 per cent in 2000 to 61 per cent in 2016.

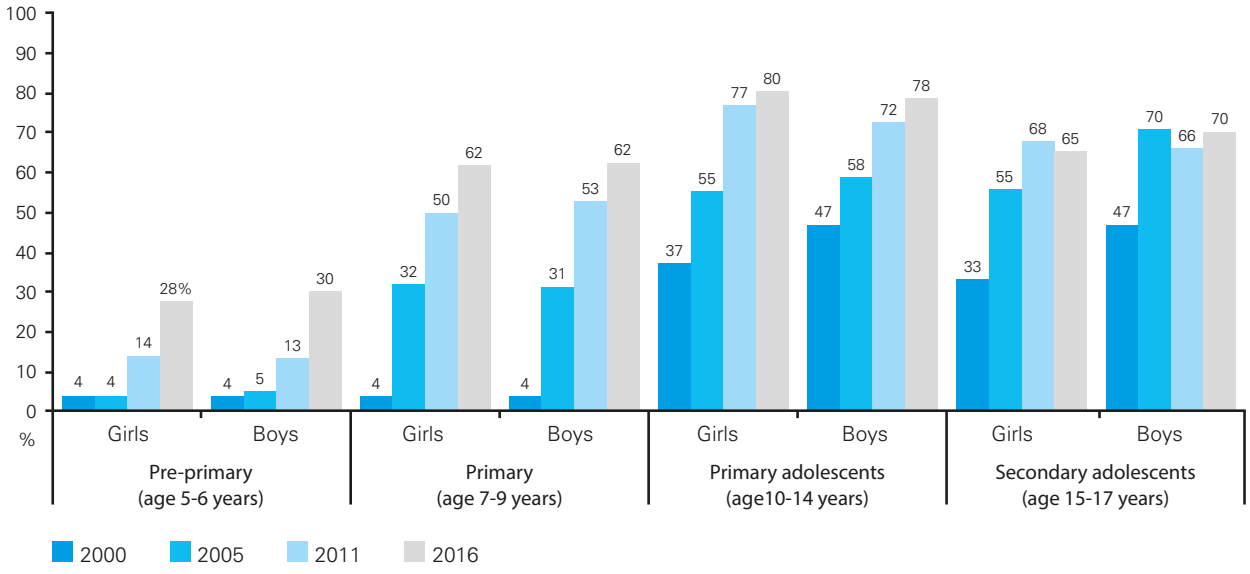
More detailed analysis, however, highlights the prevailing issues in the sector. To begin with, improvements in school attendance have not been widespread across regions. Pre-primary school attendance rates are significantly lower in rural areas and Somali, while Afar and Oromia have the lowest primary school attendance rates. In addition, incidence of delay in schooling has increased for adolescent boys (aged 15-17 years) and in Addis Ababa. Figures for educational attainment – expressed as highest grade attained among adolescents and the highest education level completed among adults – reveal several issues in the education sector. In 2016, adolescents had completed an average of five years of education – measured as the highest grade completed – which despite being an improvement (compared to two years of education in 2000), is very low for a 15-19-year-old adolescent. Figures on educational attainment of adults in 2016 shows sluggish progress and inequality between women and men; only 15 per cent of women had completed secondary or higher education compared to 23 per cent of men. The illiteracy rates flag serious concerns about the quality of education. More than half of adolescent girls– 52 per cent – were illiterate in 2016, compared to 37 per cent of adolescent boys. The low educational attainment rates in Somali and Afar, and exceptionally high illiteracy rates in Somali (80 per cent of adolescent girls) imply that the quality of education is not consistent across the country.

## School attendance

Improvements in school attendance in Ethiopia over the 16-year period have been remarkable across all levels of education, especially at the pre-primary and primary levels. Gender equality was also enhanced significantly: the percentage of young adolescent girls and boys attending primary school was nearly equal in 2016 – 80 per cent and 78 per cent, respectively – and the gap in secondary school attendance narrowed to a 5-percentage point difference.

However, these gains have not been widespread geographically. In 2016, the pre-primary and primary school attendance rates were significantly lower in rural areas and the Somali region, while Afar and Oromia ranked low in primary school attendance. Tigray, SNNPR and Benishangul-Gumuz made the most significant progress in narrowing the gender gap in secondary school attendance over the 16-year period; in Amhara the percentage of adolescent girls attending secondary school exceeded that of boys. In Afar, Harari and Somali gender inequality in secondary school attendance increased but these figures should be interpreted with caution as these three regions had the lowest attendance rates – especially among adolescent girls – in 2000 (see Annex 35). School attendance rates across all levels of education by wealth quintiles indicate

**Figure 20 Trends in school attendance, by age and gender (%)**




Source: Authors' calculations using EDHS data.

that it is associated with households' financial means. In 2016, 18 per cent of children aged 5-6 years from the poorest quintile attended preschool compared to 60 per cent of their peers in the richest wealth quintile. Inequity is equally widespread across children of primary- and secondary school-going age for both sexes (see Annex 36).

## Delay in schooling

Major improvements have also been made in continuous school attendance. The percentage of children who attended school with a delay nearly halved between 2000 and 2016. Progress has been most notable in rural areas, Amhara, Benishangul-Gumuz and Tigray for primary school attendance, and Benishangul-Gumuz, Somali and Afar (among adolescent boys) for secondary school attendance.

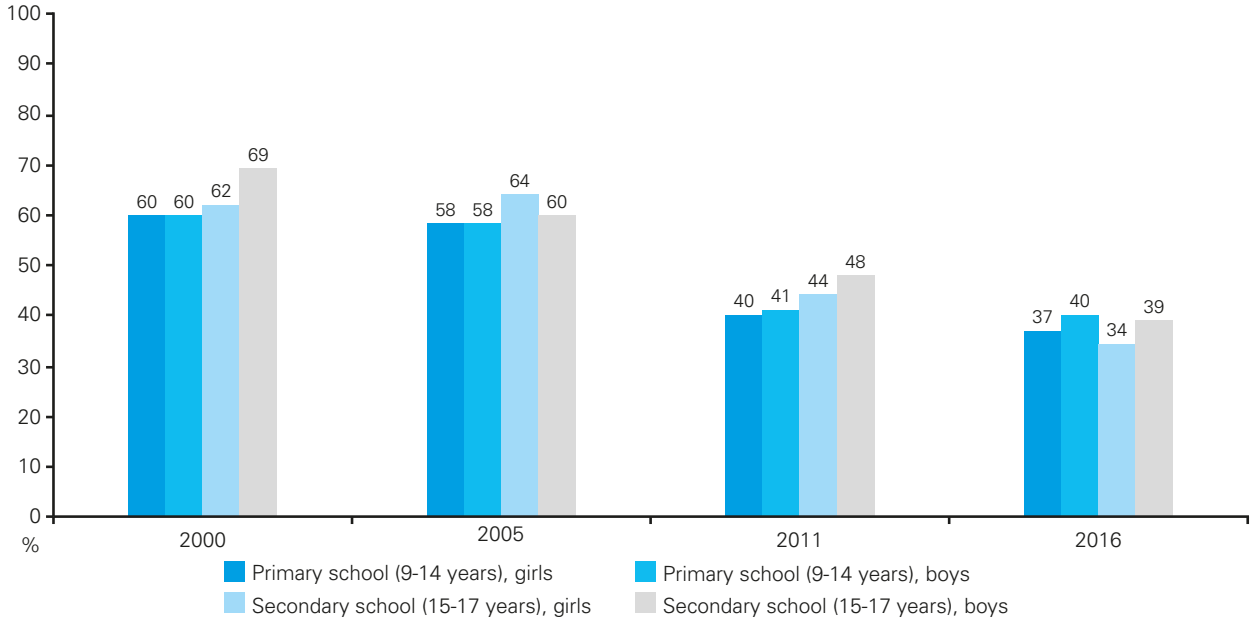
Gender patterns reversed in 2011; 15-17-year-old adolescent boys were more likely to attend school with delay than girls in 2016.

However, progress has not been consistent geographically. Incidence of delay in schooling among adolescent girls (aged 15-17 years) increased in Addis Ababa. Moreover, primary school adolescents residing in Oromia and SNNPR were more likely to attend school with delay in 2016, as were secondary school adolescent girls residing in Somali, SNNPR and Afar, and their male peers residing in Oromia. The proportion of adolescents in rural areas attending school with delay was nearly twice that of their peers residing in urban areas (see Annex 37). Disparities are wide also across wealth quintiles, hinting at equity issues. In 2016, adolescent boys from the poorest quintile were more than five times more likely to attend school with delay than their peers from the richest quintiles. Similarly, 17 per cent of adolescent girls aged 15-17 years from the richest quintile attended school with three or more years of delay in 2016, compared to nearly 62 per cent of their peers from the poorest wealth quintile (see Annex 38).

## Educational attainment of adolescents

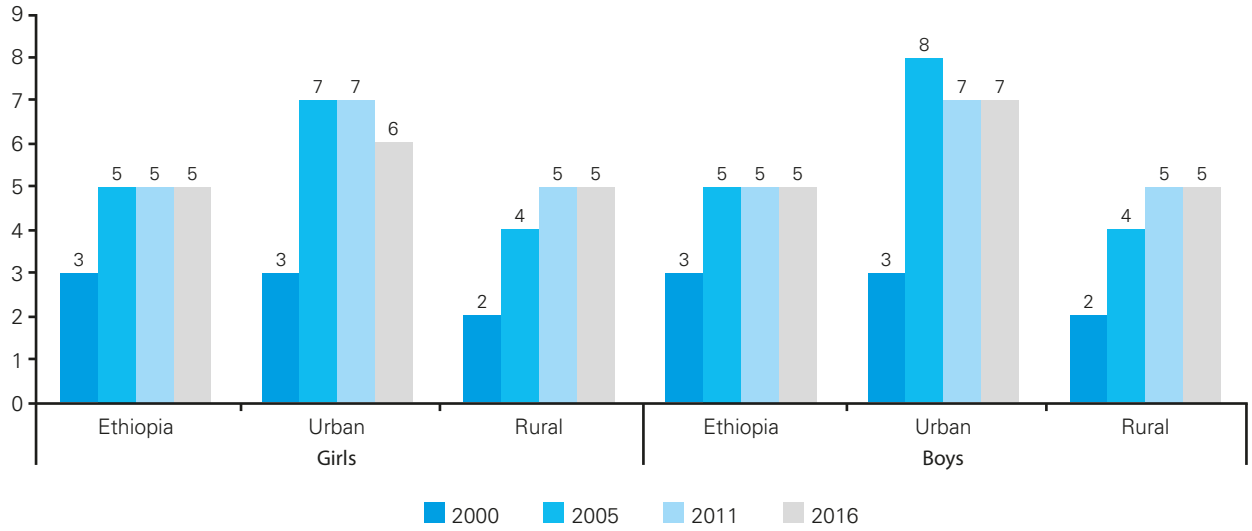
Improvements in educational attainment – measured as the highest grade attained – have been slower. The average educational attainment among adolescents was two years higher in 2016 compared to 2000, fifth versus third grade completed on average. Gender differences were negligible at the country level and across most regions in 2016; educational attainment was lower in rural areas and among adolescent girls residing in urban areas, Dire Dawa, Harari and especially Afar compared to their male peers (see Annex 39).

**Figure 21 Trends in delay in schooling, primary and secondary school, by gender (%)**




Source: Authors' calculations using EDHS data.

**Figure 22 Trends in educational attainment of adolescents, mean of highest grade completed, by gender and area of residence**

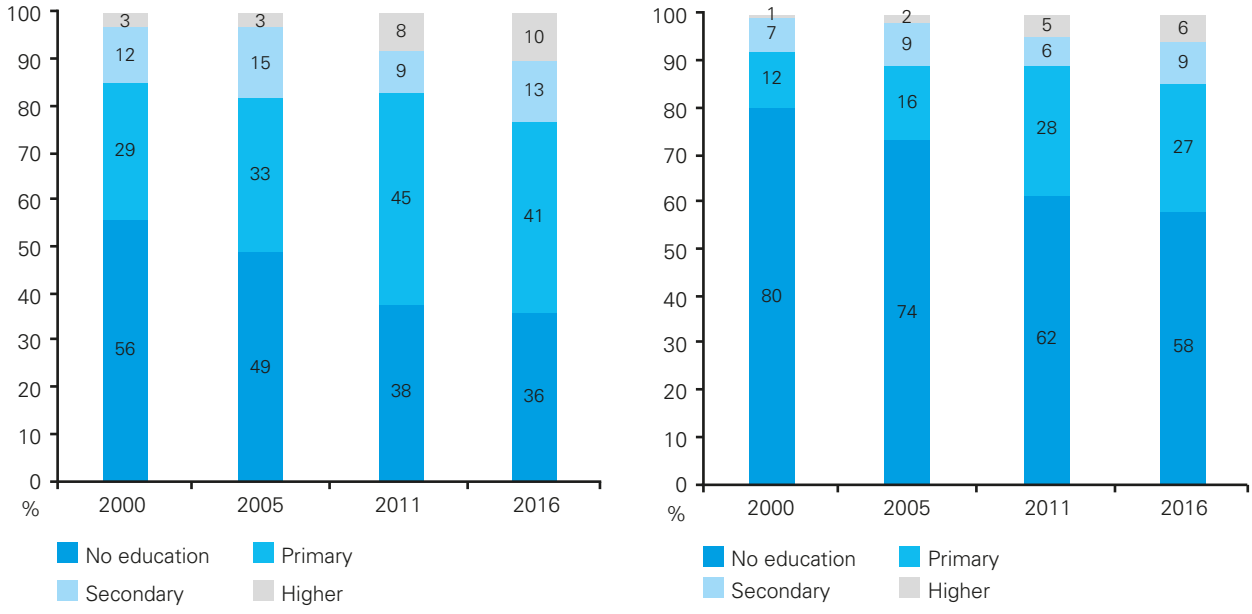



Source: Authors' calculations using EDHS data.

## Educational attainment of adult women and men

Trend analysis in educational attainment of adults – measured as the highest educational level attained – shows that improvements in education outcomes have been slow over the last 16 years, and that the gender inequality gap continues to be wide. Only 15 per cent of women aged 20-49 years had completed secondary or higher education in 2016, compared to 23 per cent of men: this is a 5-percentage-point increase since 2000. The percentage of adult women and men with secondary or higher education was significantly lower in rural areas, but women were less likely to complete secondary or higher education regardless of where they resided. Educational attainment outcomes improved significantly in Gambella and Tigray for both women and men, while progress in Harari and Somali favoured mainly men. Nonetheless, Somali (and Afar) had the lowest percentage of women and men with secondary or higher education in 2016 (see Annex 40).

**Figure 23 Trends in educational attainment, highest educational level attained, adult women 20-49 years (right) and adult men 20-59 years (left) (%)**




Source: Authors' calculations using EDHS data.

## Illiteracy

The illiteracy rate among adolescents has declined significantly since 2000 but remained high in the country overall, particularly for adult women. Very high adult illiteracy rates in Somali, SNNPR and Afar, and very high incidence of illiteracy among adolescents in Somali unmask geographical disparities in learning outcomes between men and women in 2016. Gender inequality in adult literacy has been the highest in Gambella since 2000, while Somali had the widest gender gap in adolescent literacy in 2016. Adolescent illiteracy rates have declined the most in Amhara and Oromia, among girls and boys respectively, while Tigray has seen the highest decline in adult illiteracy among both women and men (see Annex 41).

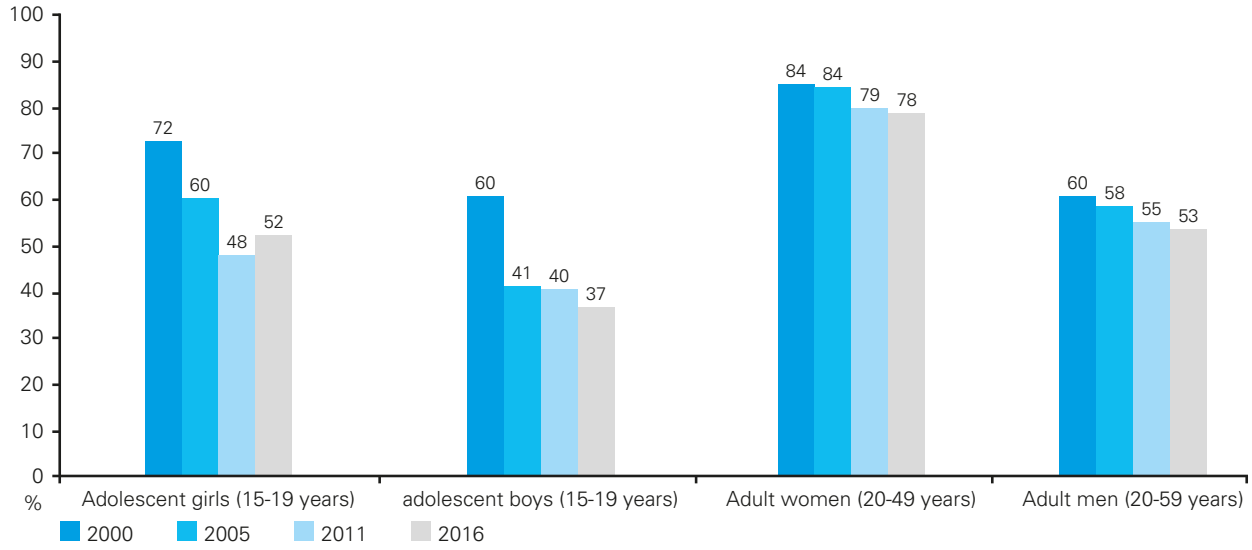
Illiteracy is also associated with household wealth; with likelihood to be illiterate significantly higher for adolescents in the poorest two wealth quintiles. In 2016, 78 per cent of adolescent girls in the poorest wealth quintile were illiterate compared to 27 per cent of their peers in the richest wealth quintile. The extent of inequity is also high among adolescent boys; 18 per cent of adolescent boys in the richest wealth quintile compared to 56 per cent in the poorest quintile were illiterate in 2016. Despite declining illiteracy rates, inequities in learning outcomes prevailed between 2005 and 2016 and require dedicated policymaking attention (see Annex 42).

## Child protection and elimination of all forms of discrimination against women

Child protection encompasses a wide range of factors that are essential for ensuring children's survival, realization of basic human rights, and equality of opportunities between girls and boys. Birth registration, for instance, enables children to access basic services and exercise other rights they are granted in the national constitution and legislation. Freedom from harmful practices like child marriage, domestic violence and female genital mutilation (FGM) ensures that girls (and women) can actively participate in the social, economic, cultural, and political spheres of life.

Harmful practices like child marriage, early pregnancy and FGM have widespread effects on girls and women. To begin with, they pose serious risks for the physical, mental, and reproductive health of girls in the present and the future and increase the risks of maternal and child mortality. Girls who are subject to harmful practices have a higher likelihood of discontinuing education and have greater exposure to HIV and AIDS. Harmful

**Figure 24 Trends in illiteracy, adolescents and adults (%)**




Source: Authors' calculations using EDHS data.

practices, gender-based violence (GBV) and other forms of discrimination against girls and women limit their opportunities for better employment, create economic dependency, violate their human rights and limit their choices.

Socio-cultural norms may have an important role to play in the perpetuation of harmful practices among children in Ethiopia and elsewhere (Bicchieri, Jiang, and Lindemans 2014; Heslop et al. 2019; John et al. 2018; UNICEF & UNFPA 2018; UNICEF 2018b; Young Lives & Save the Children 2014). In Ethiopia, practices such as FGM and child marriage in many cases are seen as a matter of status and honour, occurring under the pressure of tradition and social norms to ensure that girls and their families are socially accepted by their communities. The tradition of forced union between cousins (*abusuma*) is still persistent in parts of Ethiopia. Some families choose to marry their girls off young to avoid stigma and the label of *haftuu* (unwanted). Gender-specific norms regarding chastity and respectability of girls are an integral part of family decisions to marry children early. Furthermore, bride price is another norm that is seen as an economic survival tool for many families in Ethiopia. Different harmful practices are highly interlinked. For instance, FGM is often a precursor of child marriage, and in some cases FGM is performed later in life to ensure the marriageability of girls. Harmful practices are thus a manifestation of socio-cultural norms that perpetuate child deprivation in many communities in Ethiopia.

Socio-cultural norms notwithstanding, the elimination of harmful practices and GBV have received dedicated attention in Ethiopia's policies over the last decade. The National Strategy and Action Plan on Harmful Traditional Practices Against Women and Children in Ethiopia (2013) aims *"To see a society free of all forms of harmful traditional practices in which women and children enjoy their human rights, and economic and social opportunities without compromising their life choices."* The Government of Ethiopia has also made a commitment to eliminate child marriage and FGM by 2030, in line with SDG target 5.3. The latter was emphasized during the Government's Voluntary National Review at the 2017 High Level Political Forum, and by its adherence to the 2017 Human Rights Council resolution on the need to eliminate early and forced child marriage and other harmful practices towards children. Efforts toward ending child marriage and FGM are also part of the End Child Marriage Programme, and the National Strategy and Action Plan on Harmful Traditional Practices against Women and Children in Ethiopia (UNICEF 2018b).

Trend analysis of child protection indicators shows that progress towards eliminating child marriage and teenage pregnancy has been slow over the last 16 years. Even though incidence of child marriage halved between 2000 and 2016, from 20 per cent to 11 per cent, in Afar nearly a third of 15-17-year-olds were already married in 2016. Incidence of teenage pregnancy declined to 13 per cent in 2016, but in Somali it was as high as 19 per cent and in Afar 23 per cent. In addition, more than a third of adolescent girls experienced some form of violence – physical, psychological or sexual – during 2016. Incidence was significantly higher in urban areas, Addis Ababa, Amhara and Harari.

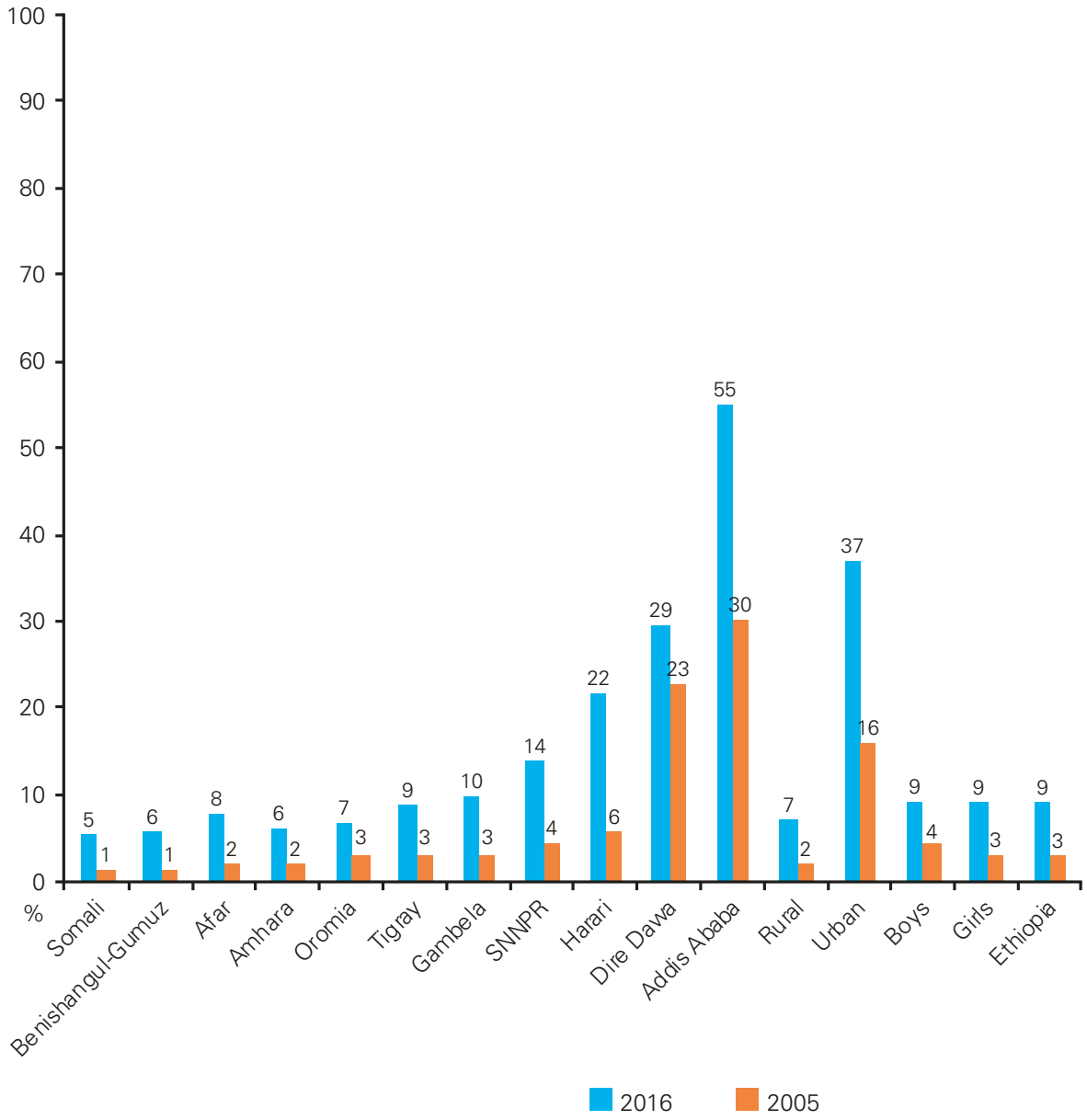
Incidence of FGM among adolescents aged 15-19 years fell from 71 per cent in 2000 to 52 per cent in 2016, but in Somali it remained as high as 96 per cent and in Afar at 87 per cent. Incidence of FGM among 0-14-year-old girls remained at 24 per cent between 2011 and 2016. Changes in attitudes towards FGM and GBV (measured as justification of wife-beating) are hopeful. Only 17 per cent of adolescent girls in 2016 had the opinion that FGM should be continued or were undetermined about it, compared to 65 per cent in 2000. The figure was even lower among adolescent boys (14 per cent). Changes in attitudes about GBV were slower. Significantly fewer men (between 13 and 20 per cent) shared the opinion that wife-beating is justified in certain situations compared to between 37 and 44 per cent of adolescent girls and adult women, respectively. Wife-beating is widely believed to be acceptable among men in Amhara, and women in Oromia, Afar, Tigray and SNNPR.

## Birth registration

The Federal Democratic Republic of Ethiopia made birth registration a legal obligation in 2012 with the enactment of the Proclamation on the Vital Registration of Vital Events and National Identity Card in 2012. Incidence of birth registration has, however, been very low over the last 10 years.[34] In 2016, 3 per cent of children across the country, and only 1 per cent of children under five in Somali and Benishangul-Gumuz had birth certificates or were registered when born, while in most of the regions – with the exceptions of Addis Ababa, Dire Dawa and Harari where it was higher – incidence of registration ranged between 3 and 4 per cent.

Trend analysis with 2005 data shows a decline in birth registration, but the figures need further investigation to understand the reasons for the difference. Birth registration is highly associated with households' wealth; children from the richest wealth quintile were more than 12 times more likely to be registered when born than those in the poorest wealth quintile, with incidence of 13 per cent and 0.9 per cent respectively. It should be noted nonetheless that birth registration incidence is very low also among the richer wealth quintile (2.1 per cent) and the middle wealth quintile (3.4 per cent).

**Figure 25 Birth registration among children under five, by area and region of residence, 2005 and 2016 (%)**



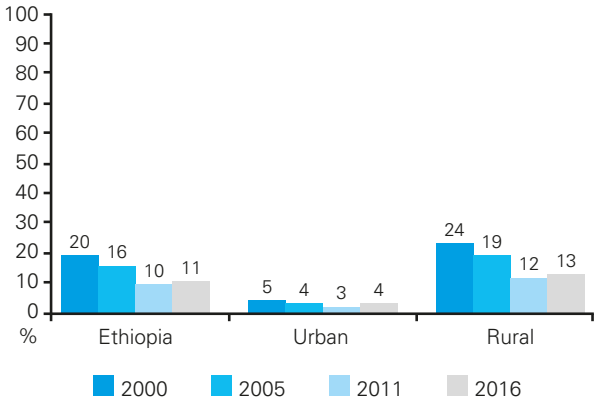

Source: Authors' calculations using EDHS data.

34 Data available only for 2016 and 2005.

## Child marriage

Progress in eliminating child marriage has been slow even though data show that incidence has nearly halved over the 16-year period. Eleven per cent of adolescent girls aged 15-17 years were or had been married by 2016, compared to 20 per cent in 2000. Girls residing in rural areas have a higher likelihood of being married during childhood. Tigray and Amhara have made significant improvements over the period but incidence of child marriage in Amhara, along with Afar and Gambella, remained high in 2016 (see Annex 43). Figures on child marriage across wealth quintiles show that it is associated with household wealth. Incidence among girls from the poorest quintile was 27 per cent in 2016 compared to 4 per cent among girls in the richest wealth quintile. Trend analysis shows that incidence of child marriage in the poorest wealth quintile has even increased from 21 per cent in 2005 while across the other wealth quintiles it has declined significantly (see Annex 44).

**Figure 26 Trends in child marriage, girls aged 15-17 years, by area of residence (%)**

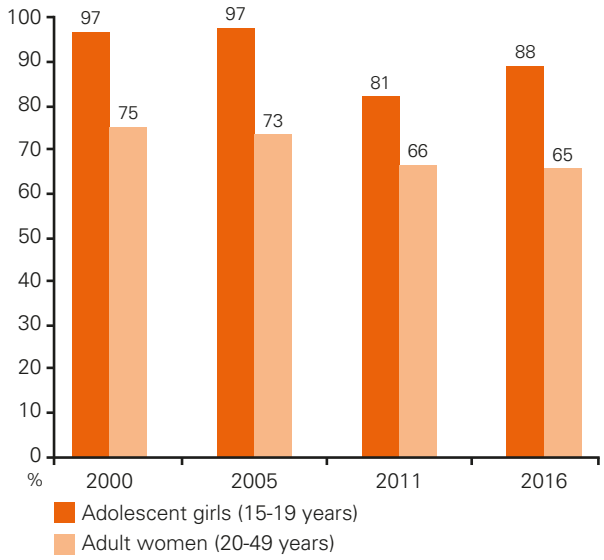



Source: Authors' calculations using EDHS data.

## Age at first sexual intercourse

Trend analysis of age at first sexual intercourse shows that progress has been slow over the last 16 years. Most adolescent girls – 88 per cent – had their first sexual intercourse before the age of 18 years, exposing them to increased health and other risks. The most significant improvements were achieved in urban areas, Addis Ababa, Dire Dawa, and Tigray. Regional inequalities, however, remain broad and unchanged since 2000; more than 92 per cent of 15-19-year-old girls residing in Afar, Gambella, and Somali had their first sexual intercourse before they turned 18 and the changes in incidence over the last 16 years have been insignificant (see Annex 45).

**Figure 27 Trends in age at first sexual intercourse, adolescents and adults (%)**

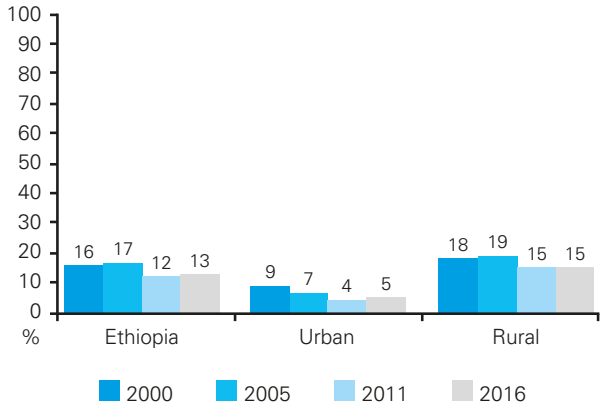



Source: CSA EDHS reports 2000, 2005, 2011, and 2016.

## Teenage pregnancy

Incidence of teenage pregnancy has not changed significantly over the 16-year period. In 2016, 13 per cent of 15-19-year-old adolescent girls had started childbearing, compared to 16 per cent in 2000. Geographical disparities were widespread in 2016, with incidence ranging from 3 per cent in Addis Ababa and Dire Dawa, to 19 per cent in Somali and more than 23 per cent in Afar. Amhara has made the most notable progress in reducing the teenage pregnancy rate since 2000, while in Somali and SNNPR the percentage of teenage mothers has increased (the increase is statistically significant only in Somali) (see Annex 46). The

**Figure 28 Trends in teenage pregnancy, girls aged 15-19 years, by area of residence (%)**



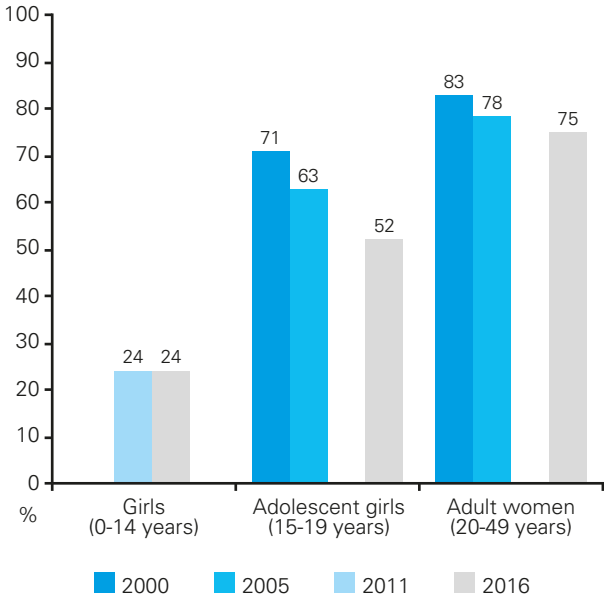

Source: CSA EDHS reports 2000, 2005, 2011, and 2016.

CSA (2016) EDHS report shows that teenage pregnancy is associated with wealth among other factors; incidence decreases with each wealth quintile, from 24 per cent for the poorest to 6 per cent for the richest wealth quintiles (see Annex 47).

## Incidence of FGM

Incidence of FGM remains very high in Ethiopia despite the progress made over the 16-year period towards its elimination. The rate remained unchanged between 2011 and 2016 among 0-14-year-old girls (WMS 2016 and 2011), while it decreased significantly among adolescents, from 71 per cent in 2000 to 52 per cent in 2016. Geographical disparities remained vast. In 2016, most adolescent girls in Somali and Afar underwent FGM (96 per cent and 87 per cent respectively), while Tigray has the lowest incidence across regions. Afar and Somali also had the highest incidence of FGM among children aged 0-14 years in 2016, 64 per cent and 37 per cent, respectively. Addis Ababa, Harari, and Oromia made the most notable progress over the last 16 years in eliminating this practice (see Annex 48). Incidence of FGM among adolescent girls across wealth quintiles in 2016 shows that it is associated with household wealth as a proxy of household financial wellbeing. Its incidence in the poorest quintile is 76 per cent, and it decreases for each subsequent wealth quintile, reaching 43 per cent for adolescent girls in the richest wealth quintile. It must be highlighted however that trend analysis shows a non-linear relationship between FGM and wealth in 2005, when FGM incidence was the lowest among the poorest quintile, as well as between FGM among adult women in both 2005 and 2016 (see Annex 49).

**Figure 29 Trends in FGM incidence among adolescent girls and women (%)**




Source: Authors' calculations using EDHS data; figures for girls 0-14 years extracted from WMS statistical reports 2011 and 2016.

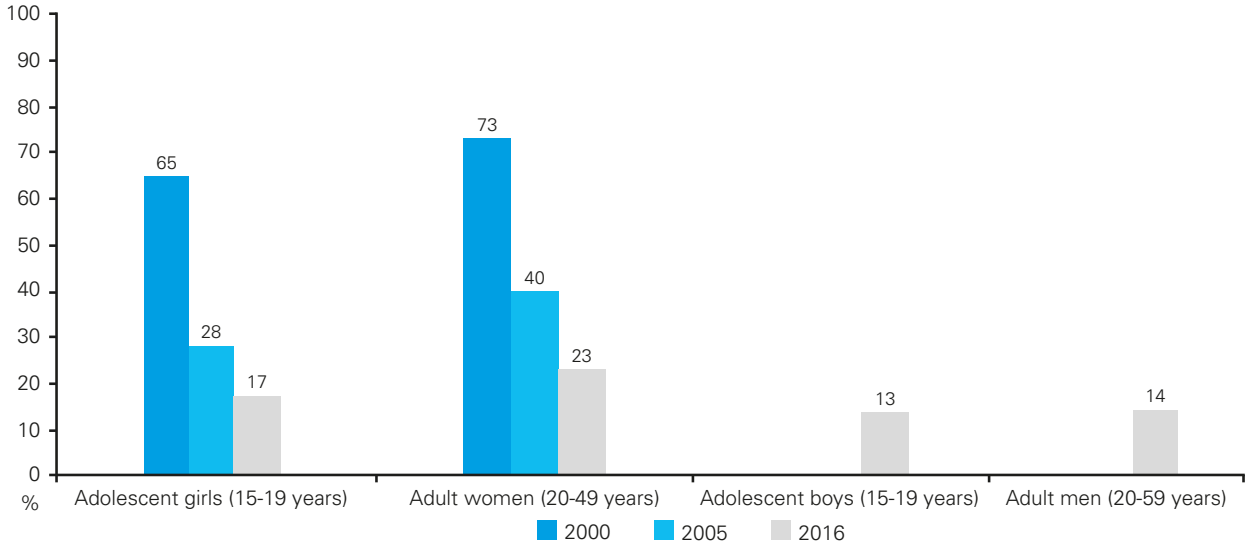
## Attitudes towards FGM

Changes in attitudes towards FGM over the last 16 years have been significant and promising. The proportion of girls and women who think that the practice should be continued or are unsure about it[35] declined sharply between 2000 and 2016; from 65 per cent to 17 per cent among adolescents and from 73 per cent to 23 per cent among adults. An even lower percentage of adolescent boys (13 per cent) and adult men (14 per cent) supported the practice of FGM or were unsure about it in 2016. These data may also reflect a change in socio-cultural norms towards harmful practices among children in Ethiopia in general.

Across regions, Amhara, SNNPR, and Benishangul-Gumuz achieved the greatest progress in changing attitudes towards FGM, while in Somali and Afar more than half of adolescents and adult women in 2016 thought that the practice should be continued, did not know or were not sure whether it should. Attitudes have also changed dramatically among adolescents in rural areas (see Annex 50). Data on attitudes towards FGM across wealth quintiles hint to a correlation between the two; both women and men from the poorest wealth quintile were more likely to share the opinion that FGM should be continued. Thirty-nine per cent of women from the poorest wealth quintile stated that FGM should be continued and this prevalence decreased for each subsequent wealth quintile, reaching 10 per cent among women from the richest wealth quintile (see Annex 51).

35 Think that the practice should be continued depending on circumstances or do not know whether the practice should be continued.

**Figure 30 Trends in attitudes towards FGM, adolescents and adults, by gender (%)**

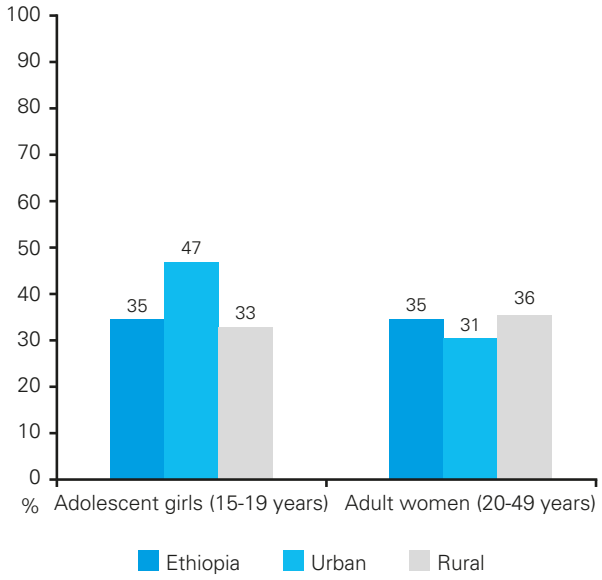



Source: Authors' calculations using EDHS data.

## Incidence of GBV

More than a third – 35 per cent - of adolescent girls and adult women experienced some form of GBV in 2016: physical, psychological or sexual. Incidence was highest among adolescent girls residing in urban areas, Addis Ababa, Amhara and Harari, and among adult women residing in Harari, Oromia and Gambella. The lowest rates of GBV were reported in Somali: 4 per cent among adolescent girls and 10 per cent among adult women (see Annex 52). CSA EDHS (2016) report finds that only 23 per cent of women who experienced violence in 2016 sought help. The likelihood of help-seeking was higher among women subject to physical or psychological violence. Another important finding is that less than 11 per cent of GBV victims sought help from formal institutions such as the police (8 per cent) or lawyers, doctors, medical personnel and social work organizations (jointly 2 or 3 per cent). Neighbours, the victim's family and the partner's/husband's family were the most common sources of support that GBV victims reached out to (CSA 2017, p.297). Figures for GBV prevalence across wealth quintiles shows no common pattern, especially among adolescent girls. Experience of GBV is highest among adolescent girls in the middle and the richest wealth quintile. Among adult women, GBV incidence is significantly higher across all wealth quintiles – ranging between 35 and 39 per cent – compared to the richest wealth quintile (at 29 per cent) (see Annex 53).

**Figure 31 Incidence of GBV, adolescents and adults, 2016 (%)**




Source: Authors' calculations using EDHS data.

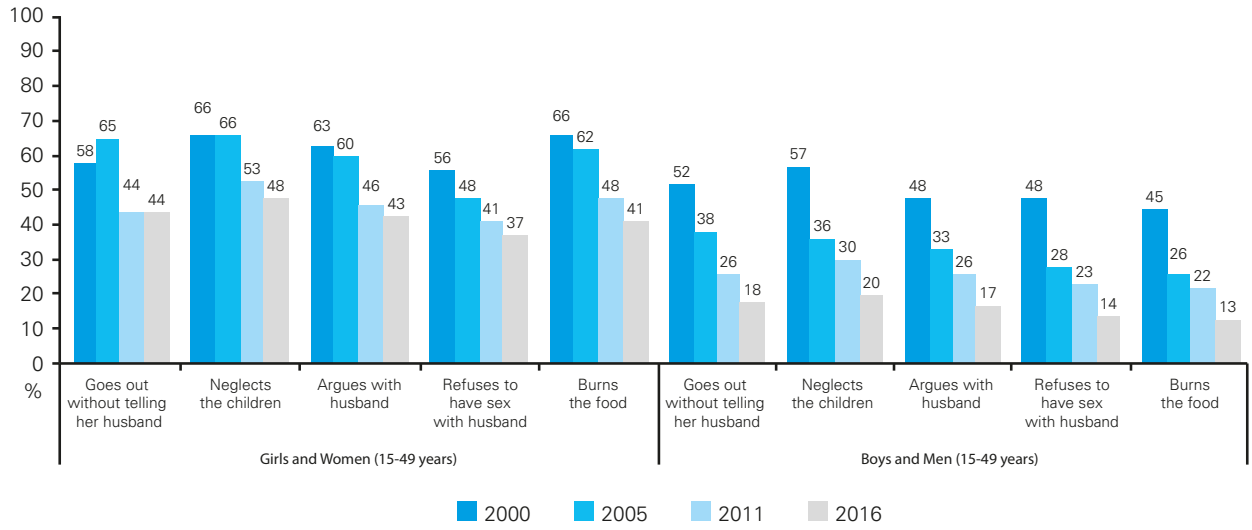
## Attitudes towards wife-beating

The last decade marks positive changes of attitudes towards GBV, measured as justification of wife-beating in the following situations: (1) if the woman goes out without telling her husband; (2) if the woman neglects the children; (3) if the woman argues with her husband/partner; (4) if the woman refuses to have sex with her husband/partner; and (5) if the woman burns the food. The percentage of women who held the opinion that wife-beating is justified in different situations was three or more times higher than that of men in 2016. Justification of wife-beating was a prevalent attitude in rural areas, among men residing in Amhara, and women residing in Oromia, Afar, Tigray and SNNPR (see Annex 54).

commitments that the country has undertaken to uphold, and the country's policy and strategy documents. The Growth and Transformation Plan 2015/15-2019/20 considers equality to be a cross-cutting issue that is a precondition for development across all the sectors. One of its strategic objectives is *"ensuring equal participation and benefit of women and youth in political, economic and social development through empowering women and youth and creating conducive environment to ensure their full participation in fulfilling their pivotal role in national development and ensuring child rights and wellbeing."*

Trend analysis of labour market outcomes of women and men shows that women are more disadvantaged than men in the labour market, but

**Figure 32 Trends in attitudes towards GBV, adolescents and adults (%)**




Source: Authors' calculations using EDHS data.

## Resources, agency, and autonomy

Women's economic empowerment is positively associated with children's wellbeing including survival, health, nutrition, and education and women's survival, health, freedom from discrimination and participation in the political, socio-economic and cultural spheres. Gains from it for the society at large are numerous, and it is one of the strongest catalysts for enhanced gender equality in the future.

Equality in employment and control of resources, along with enhancing women's agency has therefore received due attention in Ethiopia's legislation, ratified international agreements, the

also that the labour market conditions in Ethiopia are poor and provide little security and protection. The proportion of vulnerable employment has consistently been high – above 86 per cent, while less than 14 per cent of the employed population were waged and salaried workers. The employment rate of women increased from 64 per cent in 2000 to 71 per cent in 2016 but was lower than that of men (85 per cent). Women's labour force participation rate was lower and the unemployment rate higher, including among 15-24-year-olds. The proportion of women in vulnerable employment and waged and salaried workers' group is slightly smaller than among men.

Women and girls are severely disadvantaged compared to men in their use of time resources. Household chores are unequally shared between women and men due to prevailing traditional roles. The share of women responsible for fetching water for their household was eight times higher than that of men in 2016, with an insignificant change from 2000. In addition, only 37 per cent of men helped their wives/partners with household chores in 2016, of these only 18 per cent did so on a regular/daily basis.

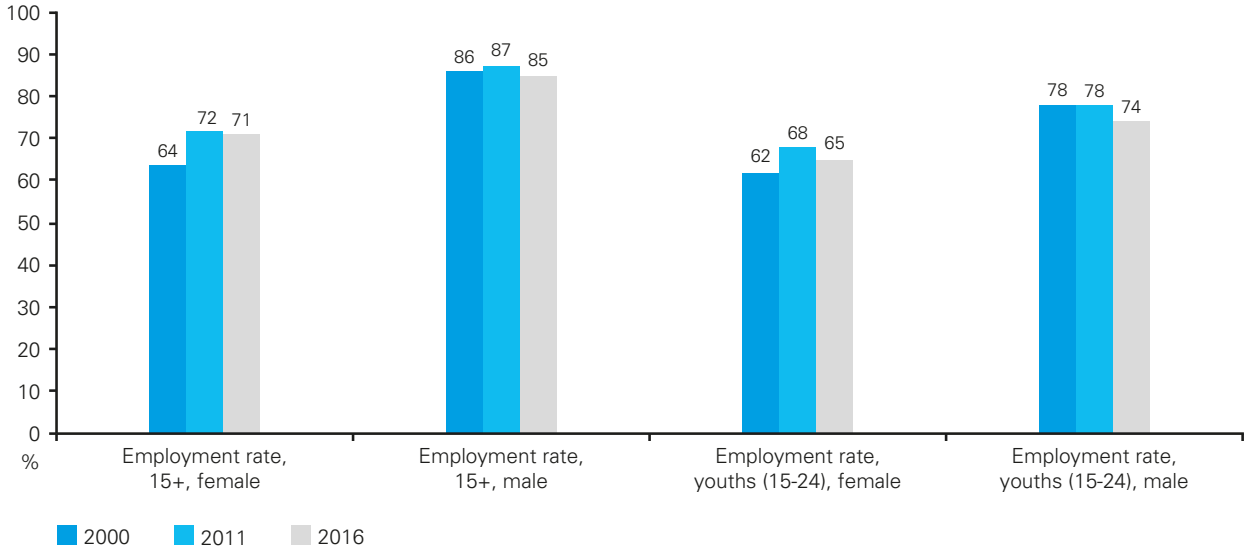
Women's control of other resources is limited, especially in certain geographical areas and regions. Only 15 per cent owned and used a bank account in 2016, while 27 per cent owned and used a mobile phone. With the exception of Addis Ababa, Dire Dawa, Tigray and Harari, incidence of bank account ownership and usage was very low. Trends in real estate ownership show that fewer women than men have control over land, and that exercising legal rights over real estate is becoming a challenge in the last few years among all citizens. Women are more likely to own real estate jointly with someone else, whereas the opposite is true for men.

Changes in the relations between women and men, and in women's participation in decision-making, have been positive and significant over the last decade. A significantly higher percentage of women participated in decisions about their own health (81 per cent), making large household purchases (78 per cent), and visiting family or relatives (79 per cent). An increasingly higher percentage have also been participating in decisions about how their partner's / husband's earnings will be spent. Somali, SNNPR, and Afar are exceptions and display lower incidence of women's participation in decision-making. Control over sexual relations is also an exception: only 45 per cent of women had control over their sexual relations in 2016, compared to 39 per cent in 2000.

## Employment

The employment rate[36] of women increased significantly between 2000 and 2011, narrowing the gender gap especially among youth. It then stagnated, and even declined among youth. The proportion of employed working-age women was significantly lower than that of men in 2016, 71 per cent and 85 per cent respectively. Despite notable progress towards gender equality over the last 16 years, women were disadvantaged in most labour market outcomes compared to men in 2016: their labour force participation rate was 11 percentage points lower, the unemployment rate of young women was double that of men, and the share of women in vulnerable employment was higher than that of men (see Annex 55). Only 9 per cent of employed women in 2016 were waged and salaried workers. It must be highlighted,

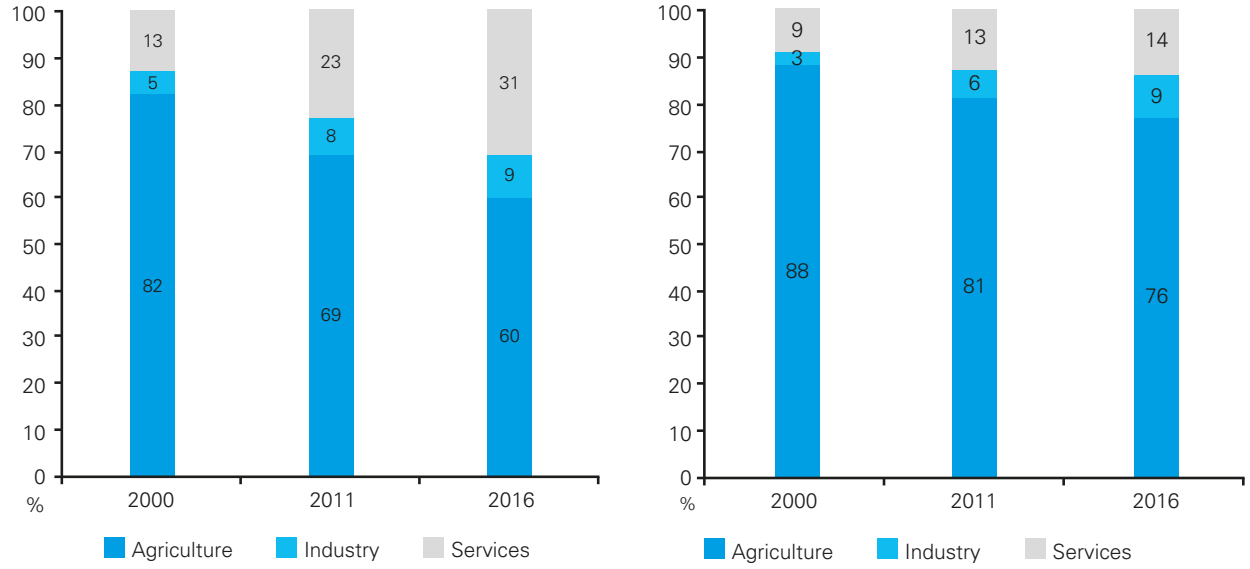
**Figure 33 Trends in employment, by age group and gender (%)**




Source: World Bank, ASPIRE database.

36 Due to data limitations and issues with consistency across EDHS waves, labour force data were obtained from the World Bank ASPIRE database. All the figures presented are based on ILO estimations.

**Figure 34 Trends in sectors of employment, women (left), men (right) (%)**



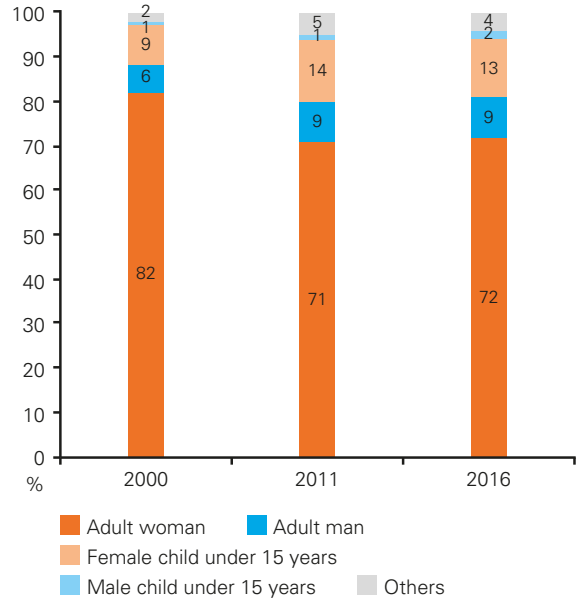

Source: World Bank, ASPIRE database.

however, that the rates of vulnerable employment are extremely high in Ethiopia in general (World Bank, ASPIRE 2019). Another trend worth noting is that men have been overrepresented in the agriculture sector over the last 16 years, while women have been moving from agriculture into the service sector.

## Time use

Women and girls are disproportionately tasked with household chores in Ethiopia, and changes since 2000 have been small. Nearly three quarters of adult women – 72 per cent – were responsible for fetching the water in 2016 compared to only 9 per cent of men. The 10-percentage-point decrease in the share of women tasked with chores between 2000 and 2016 was unevenly distributed among girl children and men.

**Figure 35 Trends in allocation of household chores (fetching water) among household members, by age and gender (%)**



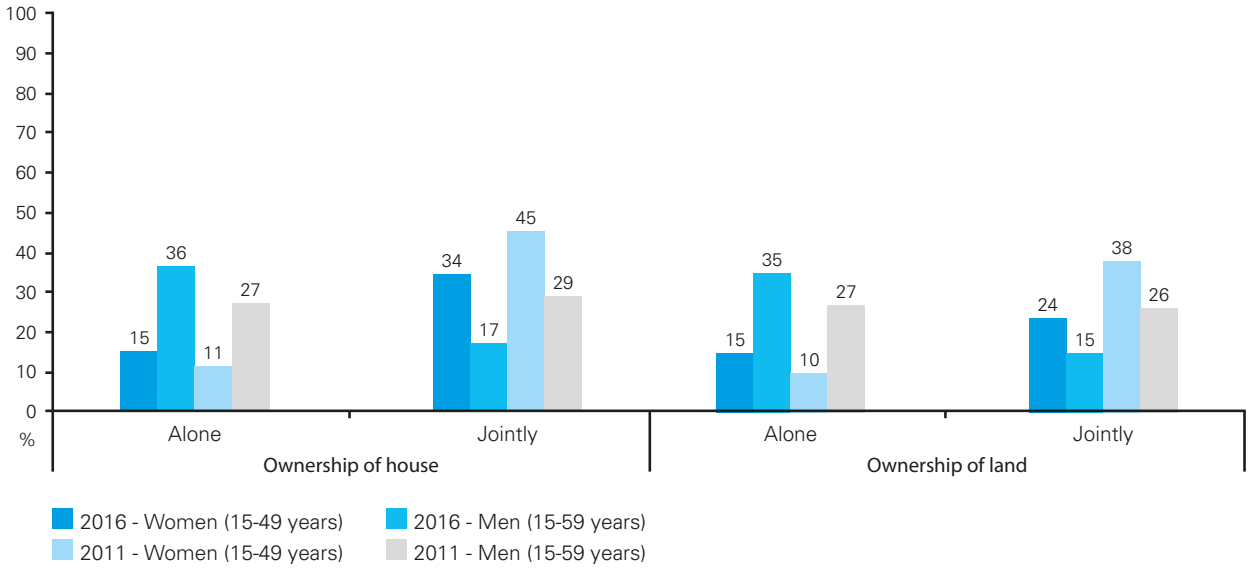

Source: Authors' calculations using EDHS data.

In 2016, 37 per cent of men helped their wives/partners with daily tasks such as looking after children, cleaning the house, and so on. Only 18 per cent of these men helped with these chores on a daily basis compared to 24 per cent in 2011. Across regions, the share of men engaged daily in household chores was largest in urban areas, Addis Ababa and Afar (see Annex 56).

## Control over real estate: house and land ownership

Nearly half of women (49 per cent) and 53 per cent of men owned a house alone or jointly with someone else in 2016. Half of men also owned land, while incidence of land ownership among women was significantly lower at 39 per cent. A more detailed investigation of land and house ownership depicts gender inequality in ownership of real estate. Nearly twice as many men – 26 per cent compared to 15 per cent of women – were the sole owners of their houses, and the disparity was equally high for land ownership. The data illustrated in Figure 36 show that women are more likely to own houses and land jointly with someone else, while the opposite is the case for men. Gender inequities in sole land and house ownership are widespread across all regions, with the widest gaps observed

**Figure 36 Trends in ownership of real estate, by gender (%)**




Source: CSA EDHS 2016 and 2011 reports.

in Somali, Oromia and Dire Dawa for house ownership, and SNNPR, Oromia, Benishangul-Gumuz and rural areas for land ownership (see Annex 57). Trend analysis with 2011 data shows a decline in asset ownership among both women and men – particularly for land: this is partially explained by migration trends in the country and developments in land privatization and the housing market which raises concerns for increased vulnerability in the future. It must also be emphasized that comparisons between regions and areas of residence should take into account characteristics of the geographical areas. For instance, Addis Ababa has the lowest incidence of land ownership among both women and men, but the main reason for this is that the region is largely urbanized, and land ownership is not common.

Table 2 illustrates that gender inequality in legal control over resources – owned real estate – was narrower than asset ownership. A significantly higher percentage of women residing in Amhara, Benishangul-Gumuz and Dire Dawa had title deeds on land they owned with their names on it.

**Table 2 Proportion of women and men with their names on the title deeds of the house or land owned, 2016**

| Name on the title deed of house or land owned alone and/or jointly | House | | Land | |
|---|---|---|---|---|
| | Women | Men | Women | Men |
| Ethiopia | 37.4% | 33.7% | 49.3% | 53.0% |
| Urban | 51.8% | 54.9% | 50.1% | 51.7% |
| Rural | 35.4% | 29.4% | 49.3% | 49.4% |
| Addis Ababa | 57.3% | 53.7% | 44.0% | 38.9% |
| Afar | 10.9% | 10.4% | 15.4% | 15.1% |
| Amhara | 35.6% | 28.7% | 62.7% | 53.1% |
| Benishangul-Gumuz | 24.2% | 14.2% | 24.7% | 15.4% |
| Dire Dawa | 42.2% | 22.6% | 22.5% | 12.0% |
| Gambella | 36.1% | 37.2% | 32.3% | 32.0% |
| Harari | 25.7% | 41.6% | 24.9% | 49.9% |
| Oromia | 43.4% | 34.0% | 47.6% | 50.2% |
| SNNPR | 35.6% | 31.9% | 39.3% | 48.0% |
| Somali | 19.9% | 11.6% | 10.9% | 8.4% |
| Tigray | 30.0% | 45.5% | 57.4% | 66.0% |

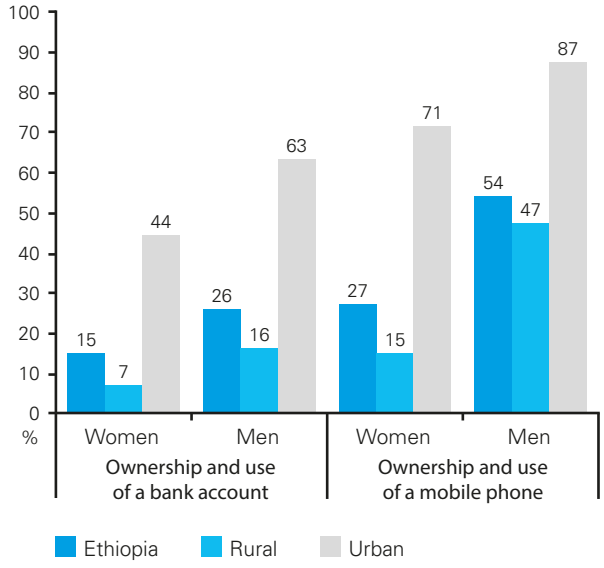
Source: CSA EDHS 2016 report.

In Harari, SNNPR and Tigray this percentage was significantly higher among men. Data shows that legal control over assets was problematic in rural areas, Afar, Dire Dawa, Benishangul-Gumuz and especially Somali in 2016.

## Access and use of other resources: bank account and mobile phone

Only 15 per cent of women owned and used a bank account in 2016, while 27 per cent owned and used a mobile phone, indicating that most women have limited access to information and lack means and opportunities for socio-economic engagement and inclusion. Nearly twice as many men owned and used a bank account in 2016, while inequality in possession and usage of a mobile phone was significantly wider. With exception of Addis Ababa, Dire Dawa, Harari and, to some extent, Tigray, incidence of bank account ownership and usage was generally low across all regions, and the lowest in Somali region and SNNPR among both women and men. Incidence of ownership and usage of mobile phones is slightly higher but there were wide disparities across regions. Only 15 per cent of women in rural areas, 21 per cent in Amhara, and 20 per cent in SNNPR owned and used a mobile phone in 2016, compared to 47, 48, and 50 per cent of men, respectively (see Annex 58).

**Figure 37 Ownership and use of bank accounts and mobile phones, 2016 (%)**

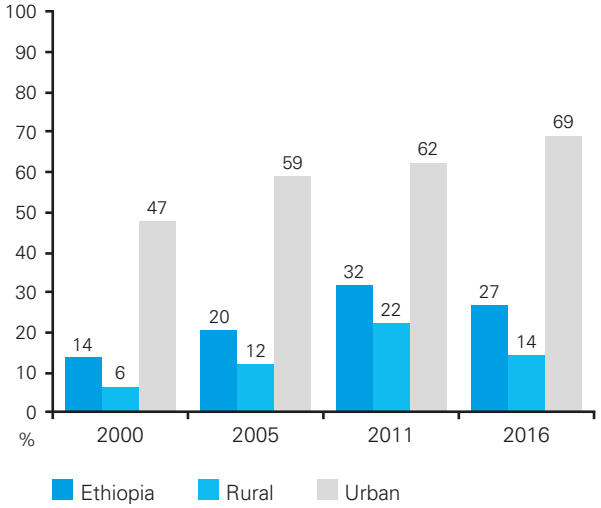



Source: Authors' calculations using EDHS data.

## Exposure to media

Trends in exposure to media – measured as whether the woman had access to at least one media source (newspaper, radio, television or internet) on a regular basis (once per week) – shows that there are large geographical disparities. Women in urban areas were nearly four times more likely to have media exposure in 2016 than women residing in rural areas. In Somali and Amhara, incidence of media exposure has been consistently low over the last decade, reaching 11 per cent and 17 per cent respectively in 2016. It must be emphasized that exposure to media declined overall in the country between 2011 and 2016, possibly as a result of the takeover of mobile phones (see Annex 59).

**Figure 38 Trends in women's exposure to media, by area of residence (%)**



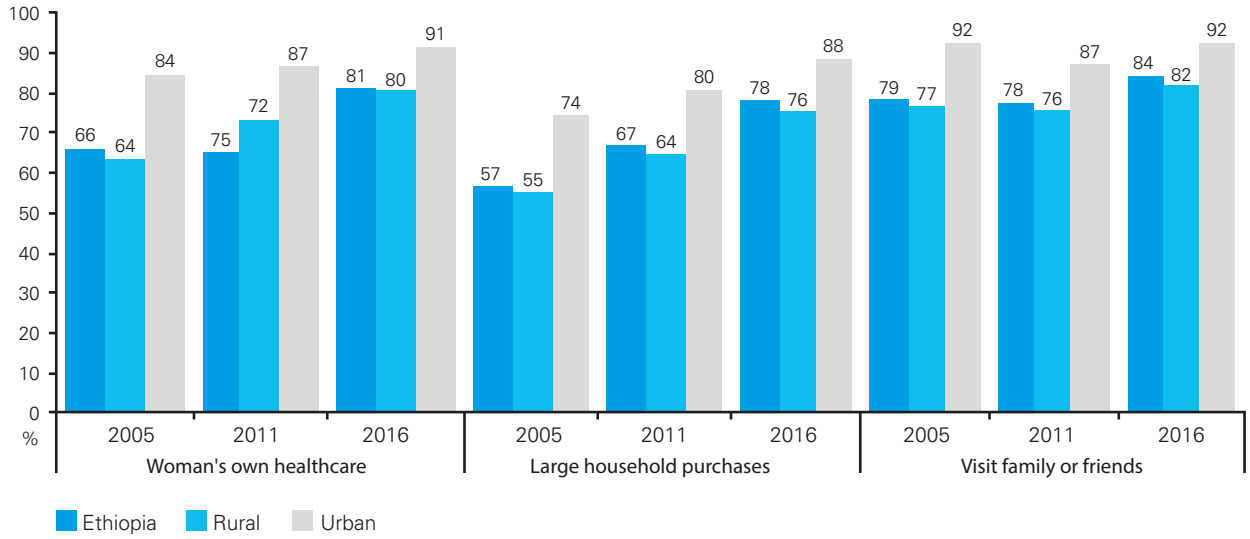

Source: Authors' calculations using EDHS data.

## Agency and autonomy

### Decision-making power in the household

An increasingly higher number of women participated in decision-making regarding their own health care, large household purchases and visiting their families or relatives in 2016. The trend has been positive for all three situations, but geographical disaggregation of data shows that only three quarters of women in rural areas participated in decision-making for large household purchases in 2016. Across regions, in 2016 Afar noted the lowest incidence of women who participated in decisions about seeking health

**Figure 39 Trends in women's decision-making power in the household, by area of residence (%)**



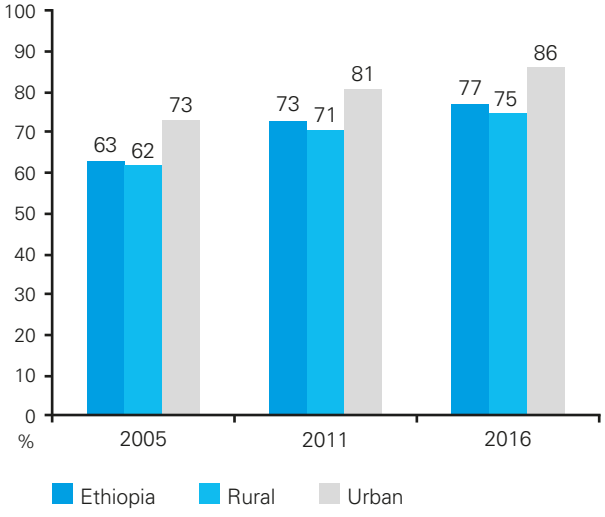

Source: Authors' calculations using EDHS data.

care (71 per cent) and large household purchases, along with Somali and SNNPR (70-71 per cent each). Only 76 per cent of women in SNNPR participated in decisions to visit their family or relatives in 2016 (see Annex 60).

### Decision-making power over husband's/partner's earnings

The trend analysis on women's partaking in decisions on spending of husband's/partner's earnings has also been encouraging, especially in urban areas. Somali and Afar are the exception; only 60 per cent of married women in Afar participated in decisions about how their husbands' earnings would be spent (see Annex 61).

**Figure 40 Trends in decision-making power over husband's earnings (%)**

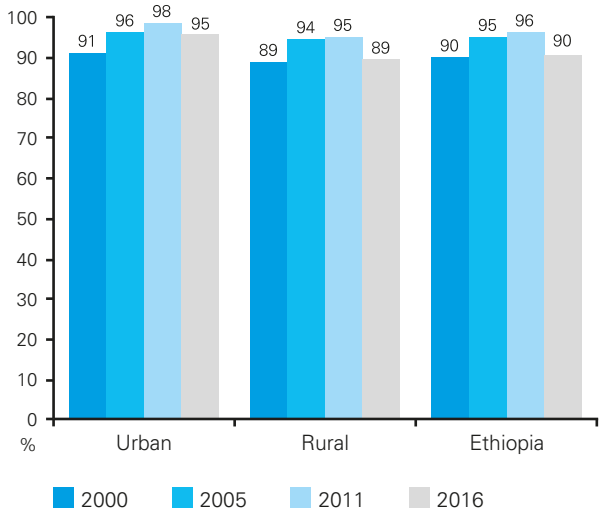



Source: Authors' calculations using EDHS data.

### Decision-making power about use of contraception

Ninety per cent of women aged 15-49 years in Ethiopia claimed to make decisions about usage of contraception on their own or jointly with their husband/partner. Differences in decision-making power are insignificant between rural and urban areas. In most regions, temporal changes have been insignificant except for in Somali[37] and Harari where it has deteriorated, and Afar and Amhara where slight progress has occurred (see Annex 62).

**Figure 41 Trends in women's decision-making power about usage of contraception, women aged 15-49 years (%)**



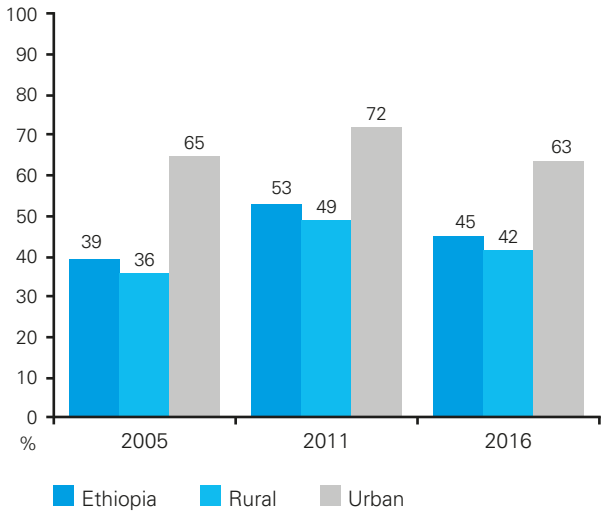

Source: Authors' calculations using EDHS data.

37 Figures should be interpreted with caution because of the high number of missing values.

## Control over sexual relations

Trend analysis of control over sexual relations – measured as the ability of the woman to say no to her husband if she does not want to have sexual intercourse and to ask him to use a condom – shows that there are prevailing socio-cultural issues with women's agency. Only 45 per cent of women had control over their sexual relations in 2016, showing a slight improvement after a decade. Incidence was even lower in Oromia, SNNPR, and particularly in Somali region where only 28 per cent of married women had control over their sexual relations in 2016 (see Annex 63).

**Figure 42 Trends in control over sexual relations, by area of residence husband's earnings (%)**




Source: Authors' calculations using EDHS data.

# Trends in women's empowerment

## Introduction

In many countries around the world, women are still vulnerable and deprived in various dimensions of their wellbeing. This affects their agency to act upon and achieve their full potential. One of the ways to improve the wellbeing of women, and their dependents such as children, is to provide opportunities to invest in sets of skills and attitudes leading to personal empowerment. Women's empowerment is an important tool for personal and societal development. It is found to have positive influences in various domains of personal, familial and community lives, and on the overall development of a country.[38] Not least, women's empowerment and autonomy and improvement in their political, social, economic and health conditions are important ends in themselves.

Although some progress has been observed in some of the indicators of women's empowerment in Ethiopia since 2005, there is still a need for more investment in female-related outcomes to achieve the targets of SDG 5 on women's empowerment by 2030. In this chapter, indexed women empowerment measurements are presented to observe trends and current status in this sphere of women's wellbeing in Ethiopia. A diverse set of indicators are employed as indexed measurements of empowerment, as often empowerment encompasses multiple dimensions. Specifically, this means that a composite of factors in the economic, educational and socio-cultural domains may have simultaneous effects to determine a woman's empowerment. For this reason, in addition to the trend analysis of various indicators of women's empowerment carried out in the previous chapter, a Women's Empowerment Index (WEI) is constructed to analyse the topic in a comprehensive manner.

This chapter presents the trends observed in the overall empowerment index as well as in the domains composing the index. Moreover, the relationship between different domains of women's empowerment is presented. In terms of structure, this chapter is divided into four sections, namely: (1) a literature review on the definition and different measures of women's empowerment; (2) a methodology section, where details are presented on how the WEI is constructed and related analyses carried out in the chapter; (3) a section that presents the findings; and (4) a section that discusses and draws conclusions about the evidence presented.

## Literature review

The concepts of women's empowerment and gender equality have received great attention in academic and policy circles over the last two decades. They are endorsed by the global development agenda and are part of several international conventions and declarations, including the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the Beijing Declaration and Platform for Action, and UN Women's Empowerment Principles, among others.

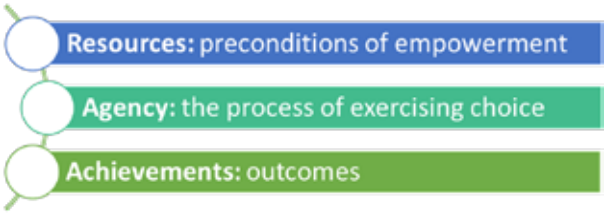
The World Bank defines empowerment as "enhancing the capacity of an individual or group to make purposive choices and to transform those choices into desired actions and outcomes"[39] In academic literature, empowerment is commonly viewed as the *'ability to make choices'*. Previous studies on women's empowerment focused on four common elements: education, employment, political participation and household decision-making power. By defining women's empowerment as a process rather than a 'static' measurement Kabeer (1999) set the foundation for most of the succeeding work. In her work, Kabeer (1999) defined three closely interrelated dimensions of empowerment: resources, agency, and achievements. *Resources* refers to pre-conditions of empowerment, not restricted only to conventional material resources (e.g. access to land) but also including human and social resources that enable one to exercise choices. *Agency* refers to the process of exercising choice, broadened to include not only decision-making but also elements of norms, rules, and social

38 USAID (2018). Gender Equality and Women's Empowerment in Ethiopia. Available at: https://www.usaid.gov/ethiopia/gender-equality-and-womens-empowerment

39 World Bank (2007). Empowerment in Practice: Analysis and Implementation. A World Bank Learning Module. Retrieved from: http://siteresources.worldbank.org/WBI/Resources/EmpowermentLearningModulebody.pdf

behaviour. *Achievement* refers to outcomes but calls for attention in distinguishing between differences in choice and inequalities in the ability to make a choice.

**Figure 43 Framework for women's empowerment**




Source: Kabeer (1999)

The selection of parameters for women's empowerment varies greatly in the literature. The parameters range from the use of 3-4 indicators to complex matrices involving physical, socio-cultural, religious, economic, political, and legal domains, with up to 30 indicators at individual, household, community, state, regional and global level. Many studies, nonetheless, use some elements of Kabeer's 1999 framework in correspondence with the data source used in the analysis.

A number of studies used empirical measurements of women's empowerment when measuring its relationship with children's outcomes. For instance, Alaofe et al (2017) assess the association between women's empowerment and maternal child nutrition in Kalale District of Northern Benin. The authors ran a factor analysis on 32 questions to index the measurement of women's empowerment. The six domains used to construct the measure include: 1) The leadership domain; 2) The decision-making domain; 3) The mobility domain; 4) The economic security domain; 5) Male involvement in housework domain; and 6) Non-family groups' domain.

Another study, by Malhotra, Schuler, and Boender (2002), summarizes the most commonly used dimensions in the measurement of women's empowerment and uses six categories: 1) Economic, 2) Socio-cultural, 3) Familial/ interpersonal, 4) Legal, 5) Political, and 6) Psychological. Separate indicators are listed for measurement of empowerment at the levels of household, community and broader.

Bayissa, Smiths, and Rube (2018) use this framework to argue that women's empowerment is multidimensional and moves beyond economic empowerment. The study uses Pearson correlations between dimensions and then regression analysis to assess the correlation between women's economic empowerment and other dimensions in Ethiopia. The regression analysis of empowerment controls for enabling factors such as education, age, marital status, number of children, access to information, ethnicity and religion. The indicators are grouped into dimensions using principal component analysis with varimax rotation, while internal consistency among indicators is assessed using Cronbach's alpha.

In the context of Senegal, Shimamoto and Gipson (2017) use a simpler model to assess the status of women's empowerment and its association with use of skilled birth attendance. They carry out factor analysis to construct three domains of women's empowerment: 1) Household decision-making, 2) Attitudes toward violence; and 3) Gender norms for sex negotiation. These domains represent *'resources'* and *'agency'* in Kabeer's model (1999), while use of skilled birth attendance is part of Kabeer's *'achievement'* criteria. The study uses structural equation modelling and controls for sociodemographic characteristics of women and households and perceived difficulty in accessing healthcare.

In Southeast Asia, Phan (2016) uses the Demographic and Health Survey (DHS) in four countries to measure women's empowerment at household level. The study uses factor analysis and defines women's empowerment using four domains: labour force participation, household decision-making, family planning and education. The methodology makes use of both orthogonal factor modelling (assuming that there is no correlation between the four domains) and Oblique factor modelling (assuming that the factors are correlated).

In sub-Saharan Africa, Hecker and Fabic (2013) carry out qualitative research with gender and health experts in Ghana, Mozambique, Senegal, and Uganda to discuss how well the DHS datasets measure women's empowerment and what changes are necessary to improve the instrument to improve the measurement. The discussion revolves around indicators across the following dimensions: 1) economic empowerment, 2) legal rights and recourse, 3) decision-making, and 4) social norms and attitudes. The authors argue that indicators used to define women's empowerment in a country should dedicate special attention

to the norms and context in which the data are collected. In other words, data and the measurement must be embedded in the cultural context of the related country, and weights must be assigned accordingly to components based on their relevance.

Existing studies on women's empowerment in Ethiopia, including its relationship with other variables, also use different definitions for the measure. For instance, Tedesse et al (2013) explore the relationship between women's empowerment and contraception, and use five components to measure women's empowerment: 1) Acceptance of domestic violence; 2) Knowledge on legal rights pertaining to empowerment; 3) Household decision-making; 4) Educational attainment; and 5) Exposure to media. A follow-up study on women's empowerment in agriculture in relation to nutritional outcomes by Tadesse et al (2014) is based on the Women's Empowerment in Agriculture Index (WEAI), which will be discussed in detail in the following section. Fantahun et al (2006) use a narrower definition of women's empowerment by focusing on *"agency"* – decision-making in the household – to assess the relationship with the use of health services and under-five mortality in Butajira, Ethiopia. A similar narrow definition of empowerment based on women's involvement in household decision-making is employed by Alermayehu et al (2015) to assess the association between women's educational status and infant mortality in Ethiopia. Another study by Abshoko et al (2016) identifies determinants of women's socio-economic empowerment in SNNPR, which includes the following factors: women's level of education, employment status, level of earnings compared to their husband/partner, exposure to media, place of residence, age at first marriage, family size, and attitudes towards wife-beating. Finally, a study by Legovini (2005) assesses women's empowerment in urban and rural areas in the framework of the World Bank's Women's Development Initiatives Project (WDIP) and uses the following domains for the measurement: 1) Economic, 2) Political, 3) Social, and 4) Psychological.

## Methodology

The first step in measuring women's empowerment was to identify indicators from the Ethiopian Demographic and Health Survey (EDHS) that optimally capture different aspects of women's empowerment in the national context and are available in the three latest EDHS waves – 2005, 2011, and 2016 – to allow for a trend analysis.[40]

The second step focused on defining the measurement of women's empowerment in the country context. The process included reviewing national and international policy, strategy and legal documents, as well as conventions and declarations, existing research, and a stakeholder consultation workshop that took place in Addis Ababa at the inception of this study. The consultation workshop included experts from national and international NGOs, academia and governmental bodies, and was held for the purpose of selecting those indicators that best capture women's empowerment and gender equality in Ethiopia. Following the consultation, a number of indicators were retained to measure women's empowerment: employment, access to resources, access to a bank account, literacy, educational attainment, participation in decisions about how to spend husband's/partner's earnings, participation in the decision about seeking health care for oneself, participation in the decision about large household purchases, control over sexual relations, decision-making about the use of contraception, participation of the husband in household chores, participation in decisions to visit family/relatives, exposure to media, usage of a mobile phone, and attitudes of the woman towards wife-beating. Table 3 below presents a detailed description of these indicators.

The aforementioned indicators were found to be suitable to measure women's empowerment in Ethiopia and reflect the intertwined nature of the three types of elements in the empowerment framework defined by Kabeer (1999): resources, agency and achievements. The criteria for retaining these indicators in the analysis included: (i) relevance to the context of Ethiopia; (ii) existing studies conducted in Ethiopia and other contexts; (iii) availability of data over years in EDHS; and (iv) data quality. Each of the indicators was coded as binary, with 1 denoting empowerment in the indicator and 0 denoting absence of empowerment. The definitions (thresholds) of empowerment were agreed during the consultations workshop with relevant institutions in Ethiopia.

40 The trend analysis could not be done using earlier EDHS data (e.g. 2000) because many of the women's empowerment indicators were collected only in the latest waves.

**Table 3 List of domains and indicators to measure women's empowerment**

| Domain | Indicator | Threshold (Empowered) | Weight for Women in Union | Weight for Women Not in Union |
|---|---|---|---|---|
| Education | Literacy | The woman is able to read a simple sentence entirely | 1/8 | 1/6 |
| | Level of education | The woman has completed at least primary education | 1/8 | 1/6 |
| Economic | Employment status | The woman is in regular, paid employment | 1/4 | 1/3 |
| Familial/ Interpersonal | Participation in the decision on spending husband's/ partner's earning | The woman participates in decisions about how to spend her husband's/ partner's earnings | 1/16 | N/A |
| | Participation in the decision about own health care | The woman participates in decision of her own health care | 1/16 | N/A |
| | Participation in the decision on large household purchases | The woman participates in decisions about large household purchases | 1/16 | N/A |
| | Participation in the decision to visit family/relatives | The woman participates in decisions to visit her family or relatives | 1/16 | N/A |
| Attitudes towards wife-beating | Woman goes out without telling her husband | The woman thinks that wife-beating is not justified if the woman goes out without telling her husband | 1/20 | 1/15 |
| | Woman neglects the children | The woman thinks that wife-beating is not justified if the woman neglects the children | 1/20 | 1/15 |
| | Woman argues with her husband | The woman thinks that wife-beating is not justified if the woman argues with her husband | 1/20 | 1/15 |
| | Woman refuses to have sex with her husband | The woman thinks that wife-beating is not justified if the woman refuses to have sex with her husband | 1/20 | 1/15 |
| | Woman burns the food | The woman thinks that wife-beating is not justified if the woman burns the food. | 1/20 | 1/15 |

Aggregation of the empowerment indicators in the index was conducted in several steps. In the first step, trend analysis was carried out for each of the indicators. In the second step, Exploratory Factor Analysis (EFA) was carried out on all the indicators, using orthogonal rotation to identify the domains (factors/latent constructs) that are more likely to cluster the evidence within domains of women's empowerment. Finally, Confirmatory Factor Analysis (CFA) was used to examine the appropriateness and generalizability of the measurement portion of the Structural Equation Model (SEM).

Given that the EDHS data had more variables measuring empowerment for women in union, notably for the Familial/Interpersonal domain, two separate indices were constructed to measure women's empowerment – one for women in union and one for women not in union.

For women in union, the econometric model grouped the indicators into the following domains: Education, Familial/Interpersonal, and Attitudes towards wife-beating. For women not in union, the model grouped the indicators into the following domains, Education and Attitudes towards wife-beating. The Economic domain was dropped by the econometric analysis because of the high level of uniqueness, but as it is an important domain of women's empowerment in Ethiopia it was used to construct the aggregate measure. The indicators and domains used for constructing Women's Empowerment Index (WEI) are shown in Table 3.

When constructing the WEI, each of the domains were assigned equal weight, as shown in Table 3. The weight of the domain was then distributed equally amongst indicators within the domain. In this study, a woman is considered empowered if she is empowered in at least 80 per cent of the total weighted indicators. For the analysis, the index is thus coded as binary, where 1 denotes empowerment in at least 80 per cent of weighted indicators and 0 otherwise. Trend analysis of the WEI use the measure in its binary form.

Each of the domains is measured in categorical form, taking values of 0 to the maximum number of indicators. For example, if a woman is not empowered in any of the Education indicators, the value of empowerment in the Education domain will be 0. If she is empowered in one of the Education indicators, for example literacy, the value of empowerment in the Education domain will be 1. If she is empowered in both Education indicators, the value of empowerment in the Education domain will be 2.

A descriptive trend analysis for 2005, 2011 and 2016 is carried out for each domain. Pearson's correlation using chi-square and Spearman's rank-order correlation are used to test the relationship between the domains of women's empowerment. In addition to these tests, ordered logistic regression analyses were used to test for the magnitude and strength of the relationships between the domains, controlling for a number of characteristics of the woman, including: age, whether she was under 18 when she first cohabited with a man, whether she is in a polygynous relationship, area of residence, religion, the gender of the household head, ownership of assets by the woman, and woman's exposure to media. Separate regressions were carried out with each of the domains as dependent variables to assess the relationship with the other domains controlling for some of the aforementioned characteristics.[41]

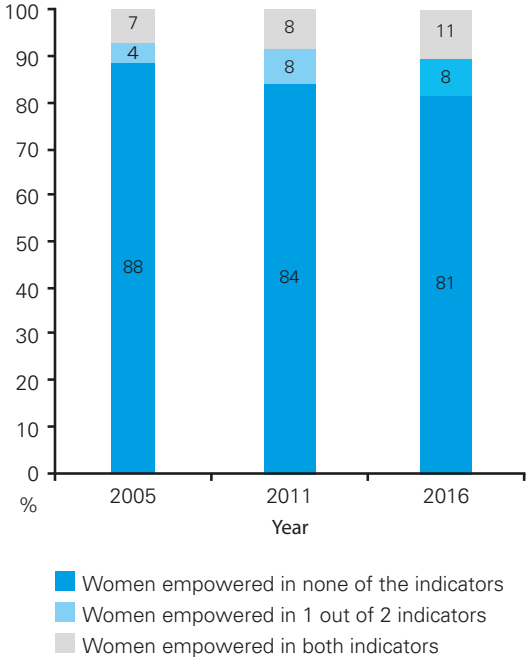
# Findings

## Empowerment of women in union

### Trends in empowerment of women in union across domains

For women in union, indicators measuring women's empowerment were grouped into four domains: Education, Economic, Familial/ Interpersonal and Attitudes towards wife-beating. Trend analysis results for each of these domains are presented in the following sections.

**Figure 44 Trends in empowerment in the Education domain, women in union (%)**




Source: Authors' calculations using EDHS data.

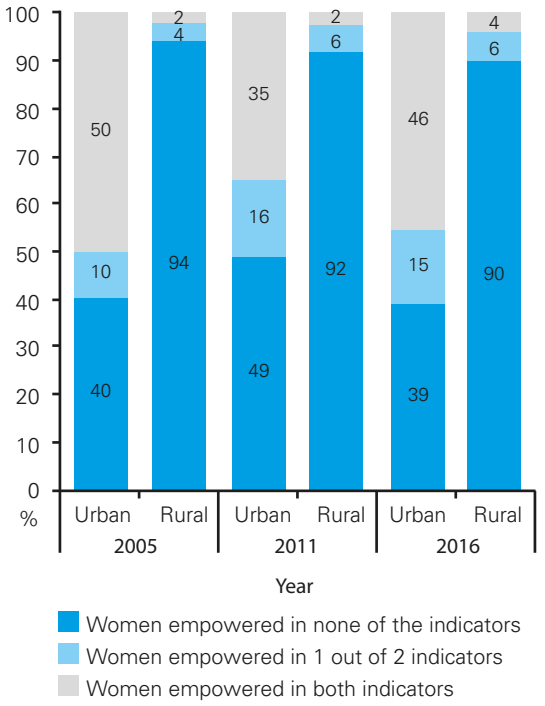
### Education domain

Trend analysis over the years 2005, 2011 and 2016 shows that the majority – more than 80 per cent – of women have not been empowered in the Education domain over the years. In 2005, 88 per cent of women were not empowered

41 Regression analysis using the Education domain as a dependent variable was not carried out because of reverse causality: that is, its strong correlation with the other domains and some of the independent variables. Also, since the education of the woman occurred in the past, while some of the controls are measured for the present time, conceptually the two cannot hold reliable explanatory evidence.

in the Education domain. Over the years, the proportion of women not empowered decreased slightly to 81 per cent in 2016, still representing an overwhelming majority of all women in union. At the same time, the proportion of women who were empowered in both indicators increased slightly, albeit from a low base, from 7 per cent in 2005 to 11 per cent in 2016. The share of women empowered in one of the two indicators has doubled over the years, from 4 per cent in 2005 to 8 per cent in 2016. Despite this increase, this is only a small improvement compared to the overall vulnerability of women in union in the Education domain.

**Figure 45 Trends in empowerment in the Education domain by urban/rural area, women in union (%)**




Source: Authors' calculations using EDHS data.

Over the years, the proportion of urban women who were not empowered in the Education domain has increased slightly, from 40 per cent in 2005 to 49 per cent in 2011, and then decreased again to 39 per cent in 2016. The proportion of rural women who were not empowered in the Education domain was almost double that of urban women and remained relatively stable over years, from 94 per cent in 2005 to 92 per cent in 2011 and to 90 per cent in 2016. In the sampled population, some progress is observed when looking at the proportion of urban women who were empowered in one of the two indicators: this proportion increased from 10 per cent in 2005 to 16 per cent in subsequent years. For rural women, this increase went from 4 per cent in 2005 to 6 per cent in the following years.

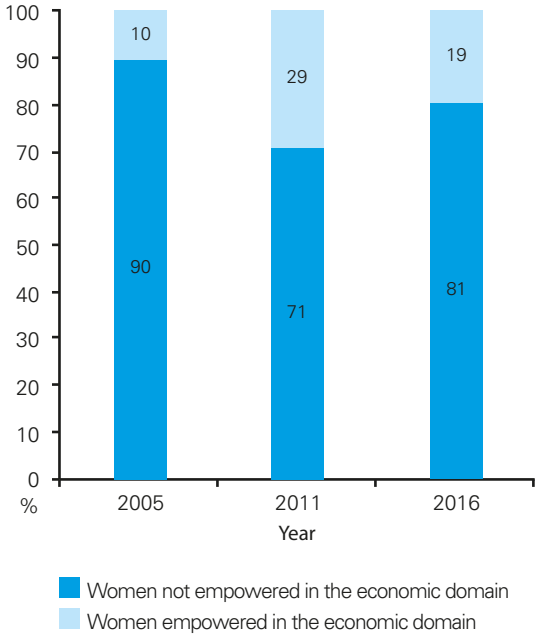
Across regions, empowerment in both indicators in the Education domain in 2016 was exceptionally low in Somali (3 per cent), SNNPR and Afar (7 per cent each), Oromia (8 per cent), and Benishangul-Gumuz (9 per cent) (see Annex 64).

### Economic domain

Empowerment in the Economic domain was measured by one indicator: whether the woman is in regular, paid employment. The findings show a fluctuation in women's economic empowerment, from 10 per cent in 2005 to 29 per cent in 2011, and then to 20 per cent in 2016.

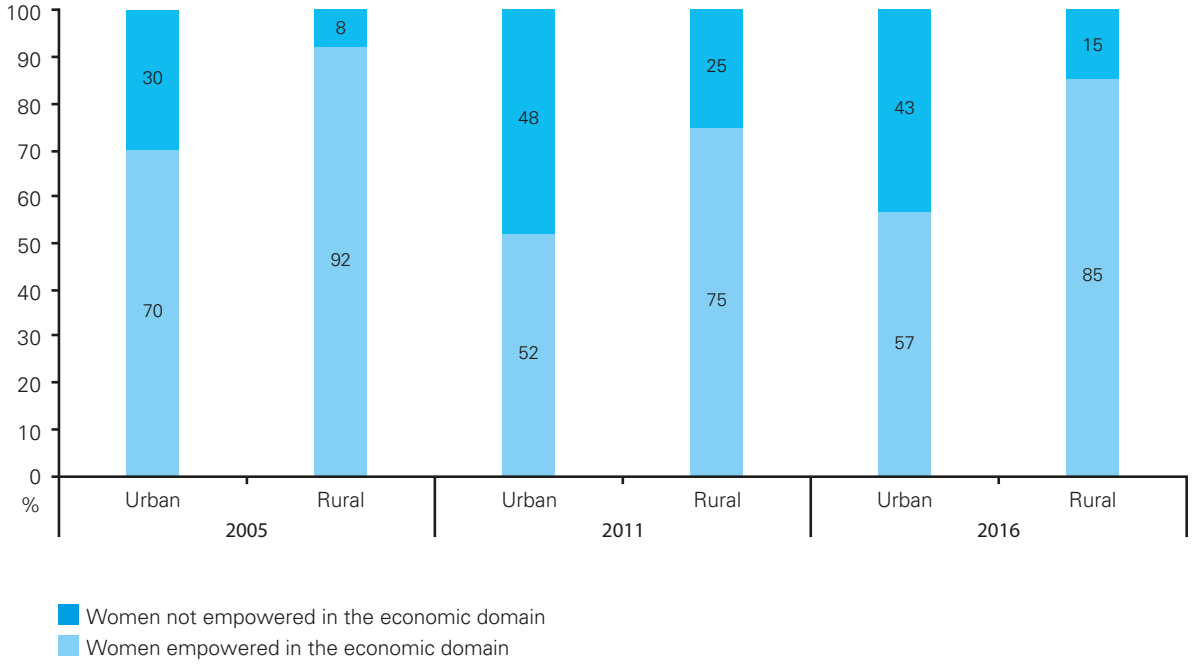
The same trend is observed for both rural and urban women in union, although the proportion of rural women who are not economically empowered is considerably higher at all times than that of urban women. For instance, in 2016 the proportion of urban women empowered in the Economic domain was 43 per cent, compared to 15 per cent of rural women. The time fluctuation of women's regular employment opportunities, in both urban and rural settings, may reflect the instability of labour market conditions in Ethiopia, especially for women.

**Figure 46 Trends in empowerment in the Economic domain, women in union (%)**




Source: Authors' calculations using EDHS data.

**Figure 47 Trends in empowerment in the Economic domain by urban/rural area, women in union (%)**



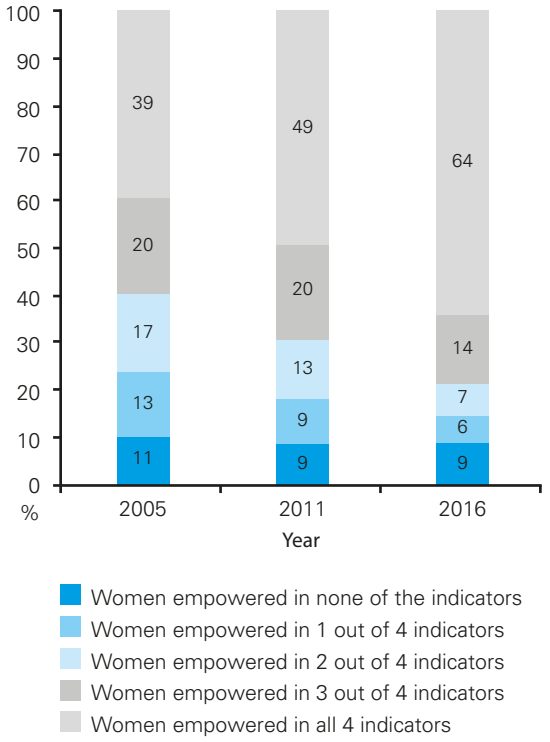

Source: Authors' calculations using EDHS data.

Across regions, incidence of empowerment in the Economic domain in 2016 ranged between 12 and 13 per cent in Afar, Amhara, Benishangul-Gumuz, Oromia, and Somali, while Addis Ababa had the highest rate of women's empowerment at 48 per cent (see Annex 65).

## Familial/interpersonal domain

The Familial/interpersonal domain was constructed using four indicators measuring the participation of women in union in the decision-making on: (i) how her husband's/partner's earnings will be spent, (ii) her own health, (iii) making large household purchases, and (iv) visiting her family and relatives. The results show an improvement over years in the proportion of women in union empowered in all indicators of this domain, from 39 per cent in 2005 to 64 per cent in 2016. Only 9 per cent of women in union were not empowered in any of the indicators in 2016. Progress is fairly visible over the years and may reflect effects of enhanced educational level attainment, access to information, changes in socio-cultural norms and/or the effectiveness of government strategies, policies and programmes in place to tackle this issue.

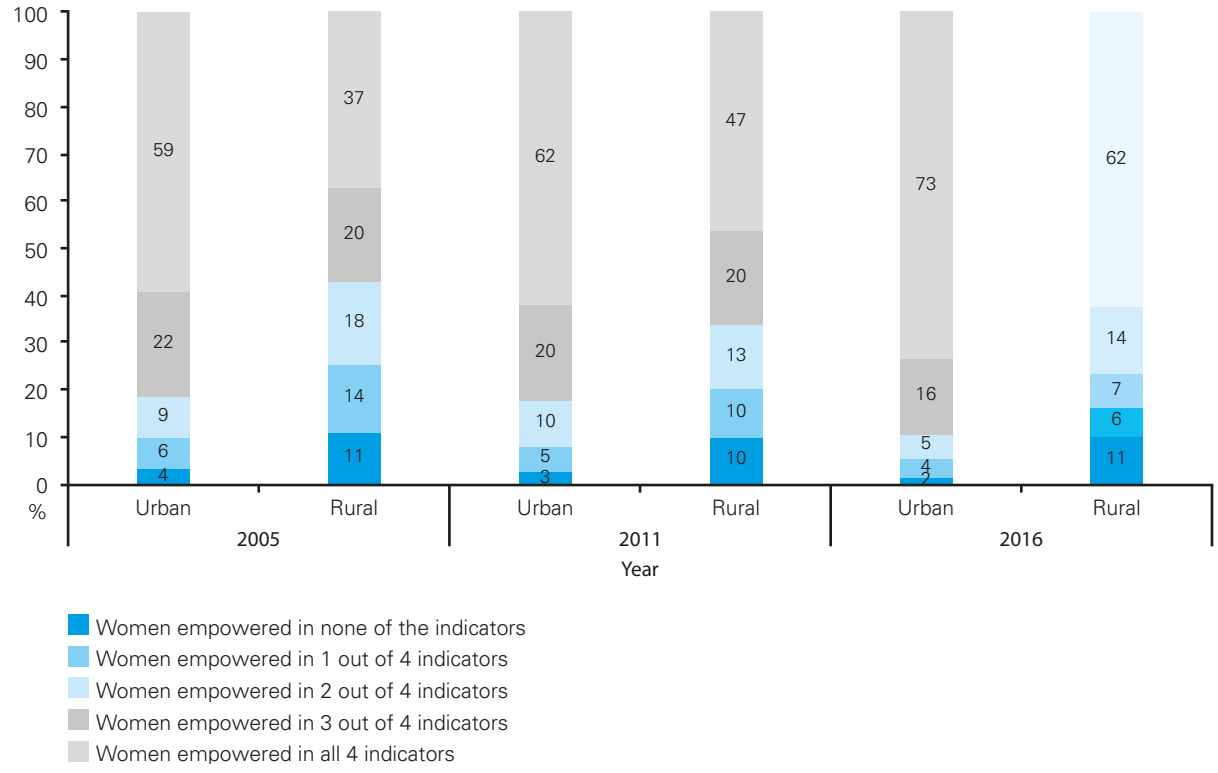
**Figure 48 Trends in empowerment in the Familial/ Interpersonal domain, women in union (%)**




Source: Authors' calculations using EDHS data.

Trends in women's empowerment in the Familial/ Interpersonal domain by area of residence shows significant progress over time. Progress in empowerment of rural women across all four indicators is higher, showing an increase from 37 per cent in 2005 to 46 per cent in 2011 and 62 per cent in 2016. The proportion of fully empowered urban women in the Familial domain over years was 59 per cent in 2005, 62 per cent in 2011 and 73 per cent in 2016. Across regions, the share of fully empowered women in the Familial domain in 2016 was highest in Harari (86 per cent), Addis Ababa (72

**Figure 49 Trends in empowerment in the Familial/Interpersonal domain by urban/rural area, women in union (%)**




Source: Authors' calculations using EDHS data.

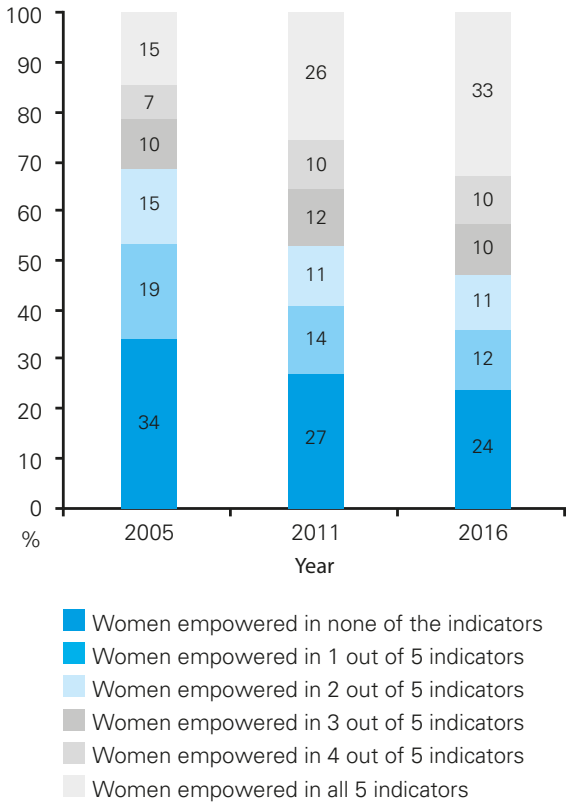
per cent), and Amhara (71 per cent), and lowest in Afar (50 per cent) (see Annex 66).

## Attitudes towards wife-beating domain

Empowerment in the Attitudes towards wife-beating domain was measured using five indicators, namely whether the woman thinks that wife-beating is justified in any of the following situations: (i) if the woman goes out without telling her husband, (ii) if the woman neglects the children, (iii) if the woman argues with her husband, (iv) if the woman refuses to have sex with her husband, and (v) if the woman burns the food. The results show that full empowerment in this domain (i.e. for all five indicators) has improved over years, from 15 per cent in 2005 to 26 per cent in 2011 and then to 33 per cent in 2016.

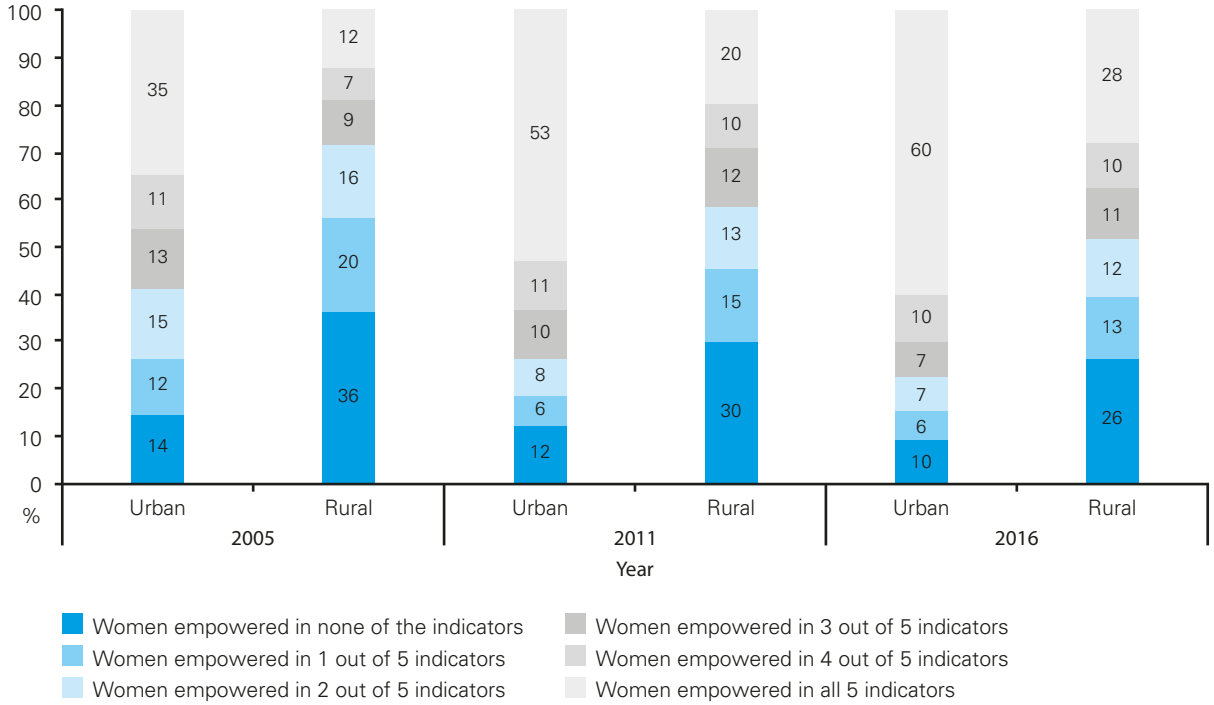
Notably, the proportion of urban women who were fully empowered in this domain reached 60 per cent in 2016, up from 35 per cent in 2005. Overall progress in empowerment of women was also substantial in rural areas; the proportion of fully empowered rural women more than doubled between 2005 and 2016, from 12 per cent to 28 per cent. Despite this progress, the gap between women in urban and rural areas in this domain is large and widening.

**Figure 50 Trends in empowerment in the Attitudes towards wife-beating domain, women in union (%)**




Source: Authors' calculations using EDHS data.

**Figure 51 Trends in empowerment in the Attitudes towards wife-beating domain by urban/rural area, women in union (%)**




Source: Authors' calculations using EDHS data.

The results indicate that dedicated efforts are required to tackle GBV and reshape related attitudes in rural areas. Across regions, Afar, Oromia, and Tigray note the lowest rates of full empowerment in the domain of Attitudes towards wife-beating with incidence of 27, 28, and 31 per cent respectively (see Annex 67).

## Relationship between the domains of empowerment for women in union

Both Pearson's and Spearman rank-order correlation tests show statistically significant correlations between all four pairs of domains (see Annex 68). The ordered logistic regression results in Table 4 show that when some variables are controlled for, the relationships between some of the domains are significant while this is not the case for the others.

Model 1 shows that empowerment in the Economic domain is positively correlated with empowerment in Education. There is no significant association with other domains that is Familial/Interpersonal and Attitudes towards wife-beating. Results also show a high likelihood of being empowered in the Economic domain when the woman is exposed to some form of media. Women from rural areas, on the other hand, are less likely to be empowered in this domain. The age of the woman has a positive relationship with Economic empowerment, while age squared has a negative relationship implying that as the women get older, economic empowerment increases albeit at a diminishing rate. The results also show that women living in polygynous relationships are significantly more empowered in the Economic domain. The age of the woman at first cohabitation and ownership of real estate do not display a statistically significant relationship with the Economic domain.

The findings of Model 2 show that there is a significant positive relationship between being empowered in the Familial/Social and in both the Education and Attitude towards wife-beating domains. In other words, women in union who are empowered in the Education domain or in Attitudes towards wife-beating domain are more likely to also be empowered in the Familial/Interpersonal domain. The results show no statistically significant relationship between the Familial and the Economic domain. They also show that the likelihood of being empowered in the Familial/interpersonal domain is higher among women exposed to media and those who own real estate. While the age of the woman shows a significant positive relationship with empowerment in the Familial/

interpersonal domain, age squared shows a negative relationship, implying that likelihood of empowerment increases at a diminishing rate on reaching a certain age. There is also a negative relationship between living in a polygynous marriage and being empowered in the Familial/ interpersonal domain. Age at first cohabitation does not show a statistically significant relationship, but area of residence is important. Women living in rural areas have a lower likelihood of being empowered in the Familial/interpersonal domain.

Model 3 shows that empowerment of women who are in union in the Attitudes towards wife-beating domain is positively associated with empowerment in the Education and the Familial/ Interpersonal domains. In other words, women who are empowered in the Education domain or the Familial/Interpersonal domain have a higher likelihood of being empowered in the Attitudes towards wife-beating domain. Once again, no significant relationship was found with the Economic domain. The age at first cohabitation squared shows a negative relationship with the

**Table 4 Relationship between domains of women's empowerment, ordered logistic regression results, women in union**

| Coefficients and standard deviations of the ordered logistic to test for the relationships between domains of women's empowerment | | | |
|---|---|---|---|
| **Independent variables** | **Dependent variables** | | |
| | **Empowerment in Economic domain** **Model (1)** | **Empowerment in Familial/Interpersonal domain** **Model (2)** | **Empowerment in Attitudes towards wife-beating domain** **Model (3)** |
| Empowerment in Education Domain | 0.466** (0.591) | 0.261** (0.591) | 0.523* (0.591) |
| Empowerment in Economic domain | - | 0.113 (0.383) | 0.032 (0.383) |
| Empowerment in the Familial/ Interpersonal domain | 0.05 (1.361) | - | 0.164** (1.361) |
| Empowerment in Attitudes towards wife-beating domain | 0.008 (2.049) | 0.112** (2.049) | - |
| Age of woman | 0.207** (7.965) | 0.07** (7.965) | -0.030 (7.965) |
| Age of woman squared | -0.003** (526.8) | -0.001* (526.8) | 0.000 (526.8) |
| Age at first cohabitation | 0.057 (3.687) | -0.046 (3.687) | -0.058 (3.687) |
| Age at first cohabitation squared | -0.001 (143.6) | -0.001 (143.6) | 0.002** (143.6) |
| Woman is in a polygynous marriage | 0.232* (8.700) | -0.500** (0.359) | 0.138* (0.359) |
| Rural area | -0.824** (0.355) | -0.175* (0.355) | -0.775** (0.355) |
| Household head is a woman | 0.117 (0.369) | -0.012 (0.369) | 0.069 (0.369) |
| Woman owns land and/or house | -0.000 0.000 | 0.278** (0.491) | 0.256** (0.491) |
| Woman is exposed to media | 0.326** (0.500) | 0.194** (0.500) | -0.003 (0.500) |
| Number of observations | 6121 | 6121 | 6121 |
| Prob > chi2 | 0.000 | 0.000 | 0.000 |
| *p<0.05; **p<0.01 | | | |

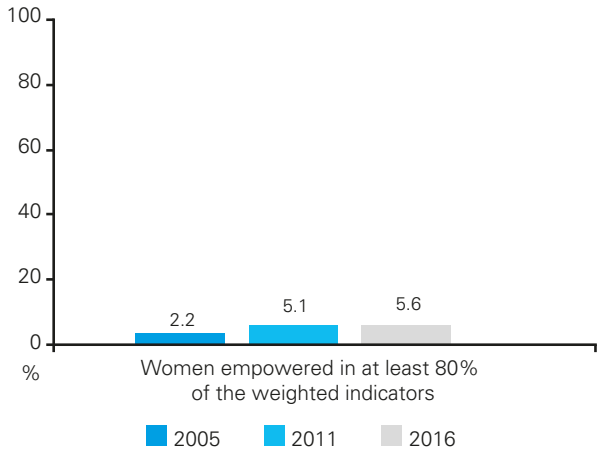
Source: Authors' calculations using EDHS data.

Attitudes towards wife-beating domain, while the relationship with age is insignificant, suggesting that the matter requires further investigation in the future. There is a positive relationship between being in a polygynous relationship and empowerment in the domain. Residing in rural areas is also negatively correlated with empowerment in the Attitude towards wife-beating domain; in other words, women residing in rural areas are more likely to justify wife-beating in any of the five situations used to construct the domain. The age of the woman, the gender of the household head and whether the woman is exposed to media do not show a statistically significant association with empowerment in the Attitudes towards wife-beating domain. Ownership of real estate is positively correlated with empowerment of women in union in this domain.

## Trends in Women's Empowerment Index, women in union

Figure 52 shows the proportion of women in union empowered in at least 80 per cent of the weighted indicators in 2005, 2011, and 2016. The percentage of empowered women has almost tripled over the years, although the progress started from a very low base, at 2 per cent in 2005 and reached 6 per cent in 2016. In other words, 94 per cent of Ethiopian women in union were still not empowered in 2016 according to the definition and domains used in this study.

**Figure 52 Trends in empowerment, women in union (%)**

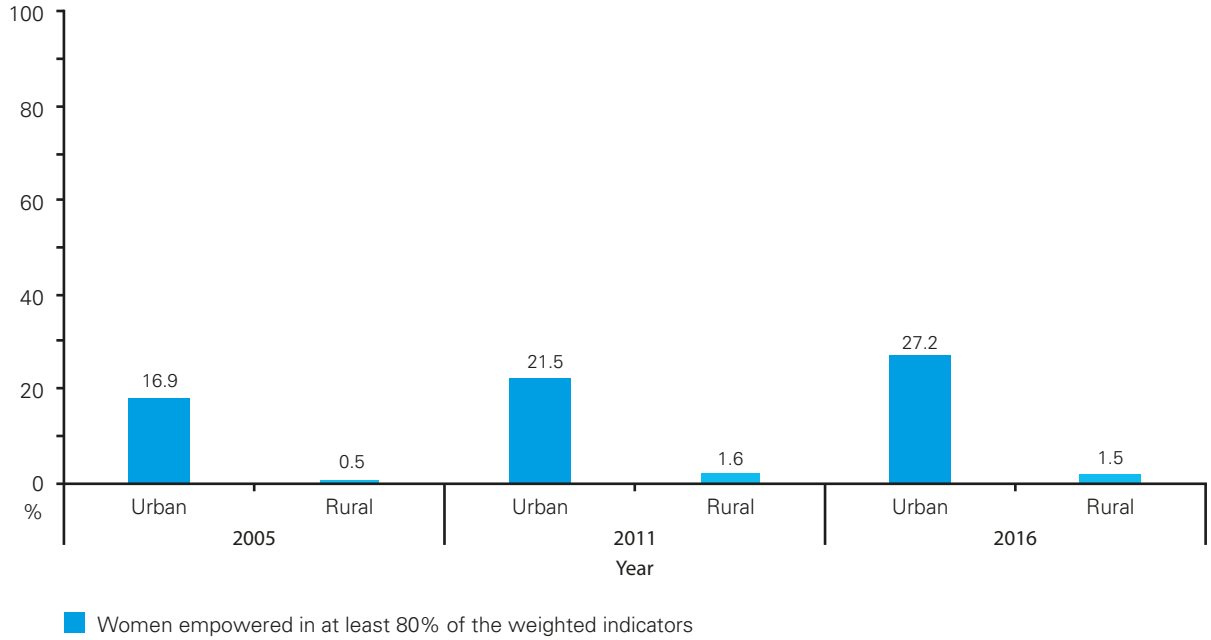



Source: Authors' calculations using EDHS data.

The findings show that substantial progress has been achieved in enhancing women's empowerment in urban areas, with incidence increasing from 17 per cent in 2005 to 22 per cent in 2011 and to 27 per cent in 2016. The empowerment rate in rural areas started at a very low base of 0.5 per cent in 2005 and increased only marginally, to 1.5 per cent in 2016. These results show large discrepancies in women's realization of basic rights in Ethiopia.

All regions, except Harari and Somali, have noted improvements over the 11-year period. The most notable progress was observed in Gambella, even though it started from a very low base of 2 per

**Figure 53 Trends in empowerment of women in union by urban/rural area (%)**




Source: Authors' calculations using EDHS data.

cent in 2005. In Addis Ababa, one third of women in union were empowered in 2016 from a rate of 27 per cent in 2005. Incidence of women's empowerment in 2016 is above 10 per cent in 4 out of 11 regions across Ethiopia: Gambella, Harari, Addis Ababa and Dire Dawa.

Disaggregation of results by wealth quintiles shows that very few women in the wealth quintiles other than the richest are empowered and that most empowered women belong to the latter. Albeit meagre, incidence of empowerment has increased across the richest and richer wealth quintiles between 2005 and 2016.

**Table 5 Trends in women's empowerment by region, women in union**

| Year | 2005 | 2011 | 2016 |
|---|---|---|---|
| Addis Ababa | 26.6% | 26.4% | 34.4% |
| Afar | 0.2% | 3.3% | 3.6% |
| Amhara | 1.3% | 4.0% | 4.7% |
| Benishangul-Gumuz | 1.5% | 3.7% | 3.3% |
| Dire Dawa | 9.9% | 13.6% | 10.9% |
| Gambella | 2.2% | 7.4% | 11.5% |
| Harari | 15.2% | 15.2% | 12.7% |
| Oromia | 1.4% | 4.7% | 4.8% |
| SNNPR | 1.4% | 3.9% | 3.5% |
| Somali | 1.9% | 1.8% | 1.0% |
| Tigray | 3.1% | 6.3% | 7.8% |

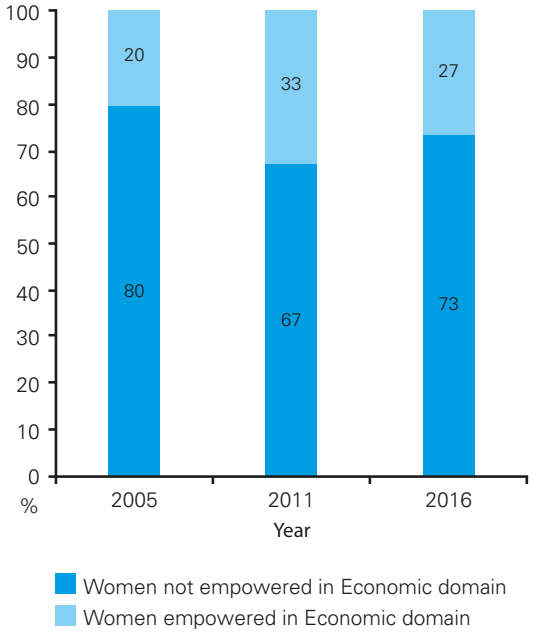
Source: Authors' calculations using EDHS data.

## Empowerment of women not in union

### Trends in empowerment of women not in union across domains

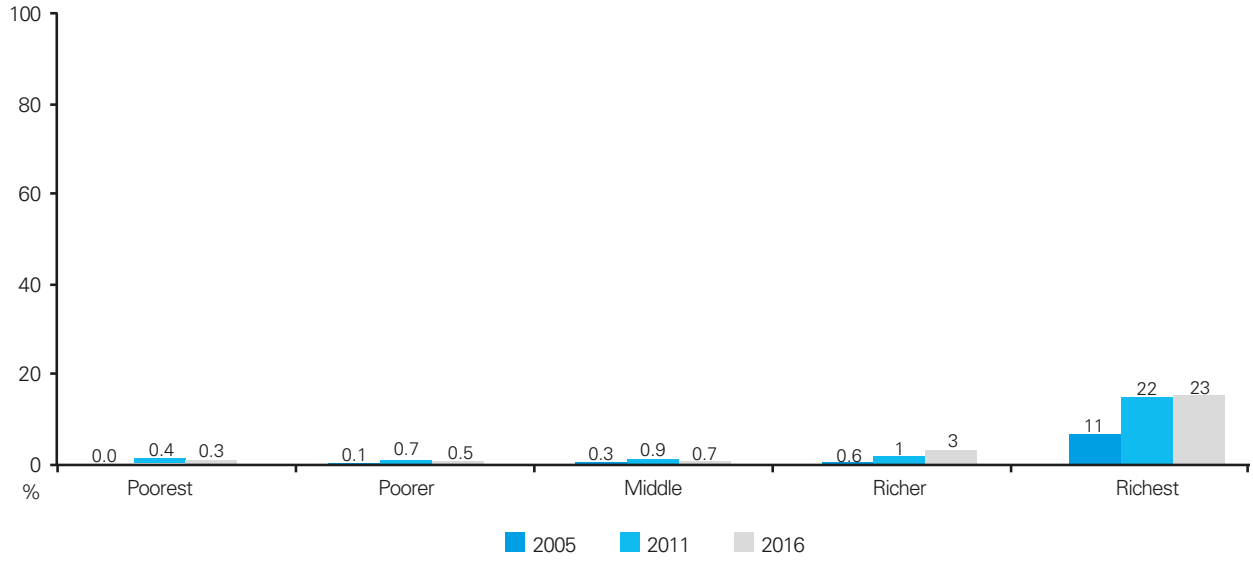
For women not in union, the empowerment indicators were grouped into the following three domains: Economic, Education and Attitudes toward wife-beating. The trend analyses of these domains are presented in the following paragraphs.

**Figure 55 Trends in empowerment in the Economic domain by area of residence, women not in union (%)**




Source: Authors' calculations using EDHS data.

**Figure 54 Trends in empowerment of women in union, by wealth quintiles (%)**




Source: Authors' calculations using EDHS data.

## Economic domain

The percentage of women empowered in the Economic domain has fluctuated over the last decade, with a small increase from 21 per cent in 2005 to 33 per cent in 2011 followed by a decline to 27 per cent in 2016.

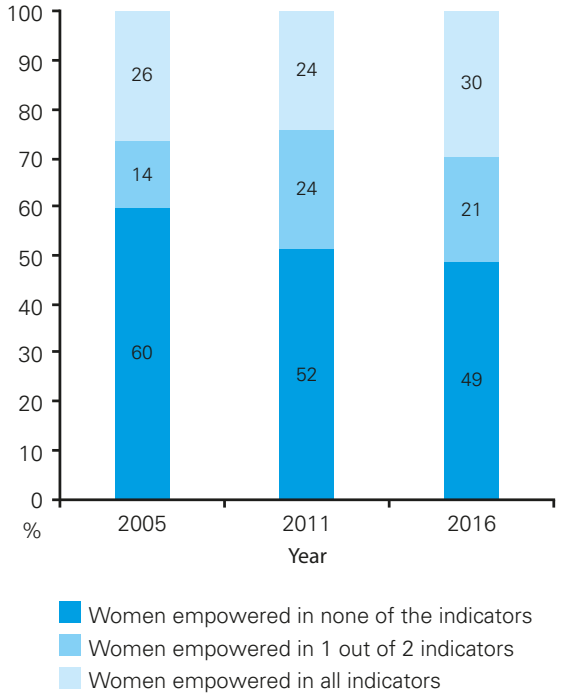
In urban areas, empowerment rates have increased at a constant pace, from 34 per cent in 2005 to 45 per cent in 2011 and then 51 per cent in 2015. In rural areas, incidence of women's empowerment in the Economic domain initially increased, from 15 per cent in 2005 to 27 per cent in 2011, but then fell to 24 per cent in 2016. These fluctuations could partially be explained by volatility of the labour market in rural areas, partially as a result of seasonality.

Incidence of women's empowerment in the Economic domain in 2016 was the lowest in SNNPR and Somali (26 per cent each), and discrepancy in empowerment across regions is wide. Between 61 and 62 per cent of women residing in Addis Ababa and Harari were empowered in the Economic domain in 2016 (see Annex 69).

## Education domain

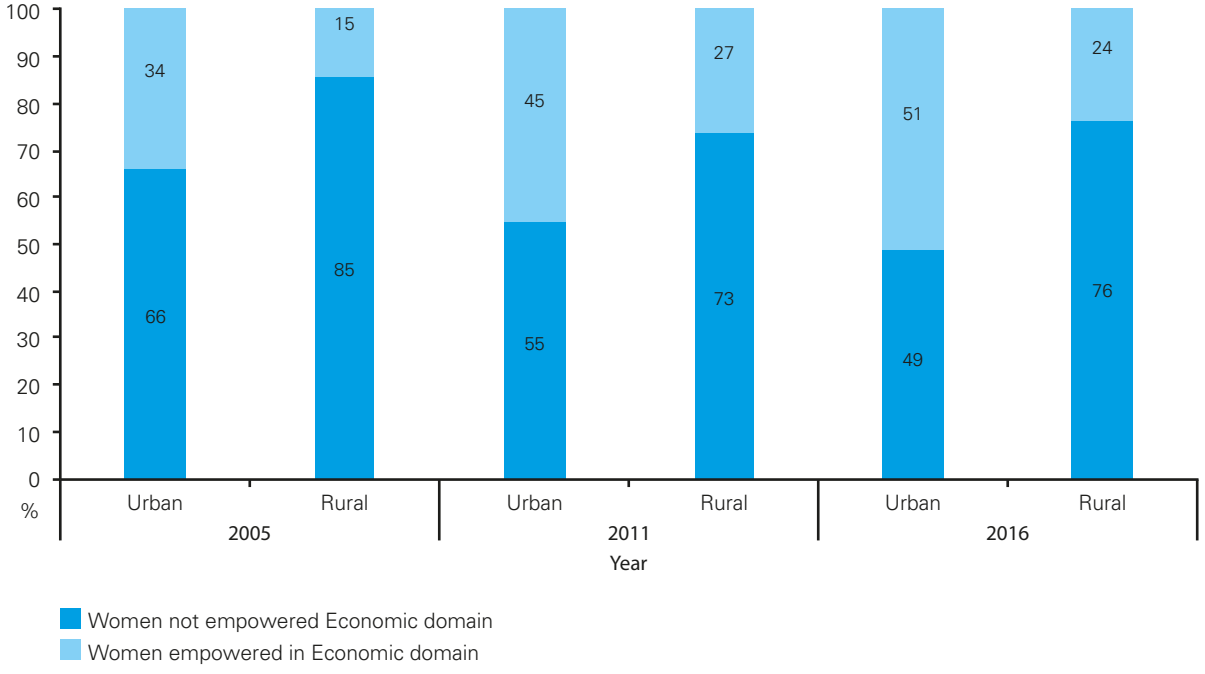
Although around 80 per cent of women not in union are younger than 30, nearly half (49 per cent) were illiterate and had not completed primary education by 2016. It must nonetheless be highlighted that progress in both of these indicators has been notable over the last decade: the percentage of women empowered in at least one of the indicators increased from 14 per cent in 2005 to 21 per cent in 2016. Similarly, the proportion of women empowered in both indicators of the Education domain has increased from 26 per cent in 2005 to 30 per cent in 2016.

**Figure 57 Trends in empowerment in the Education domain, women not in union (%)**



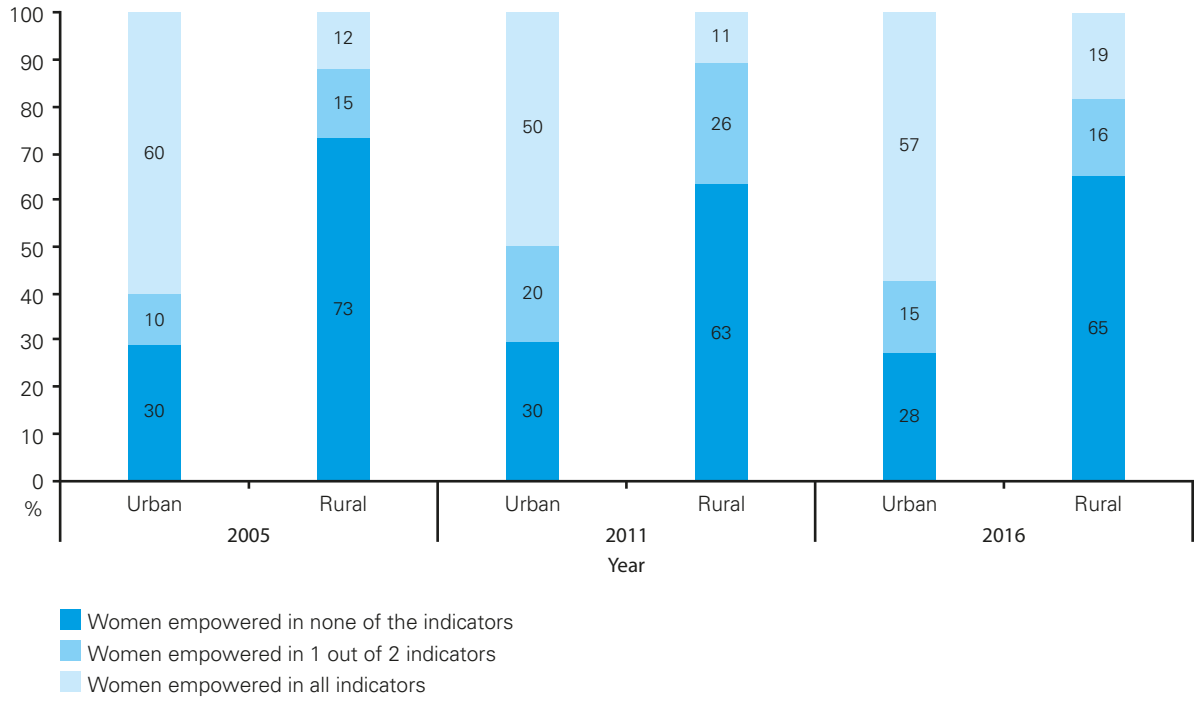

Source: Authors' calculations using EDHS data.

**Figure 56 Trends in empowerment in the Economic domain by area of residence, women not in union (%)**




Source: Authors' calculations using EDHS data.

**Figure 58 Trends in empowerment in the Education domain by area of residence, women not in union (%)**




Source: Authors' calculations using EDHS data.

Trend analysis of women's empowerment in the Education domain shows that the main driver of progress in this domain is achievements in urban areas. Even though it has been fluctuating over the 11-year period, incidence of women's empowerment in the Education domain in urban areas has remained high for both indicators – 60 per cent in 2005 to 57 per cent in 2016 – while incidence of empowerment in at least one of the indicators has increased from 10 to 15 per cent between 2005 and 2016.

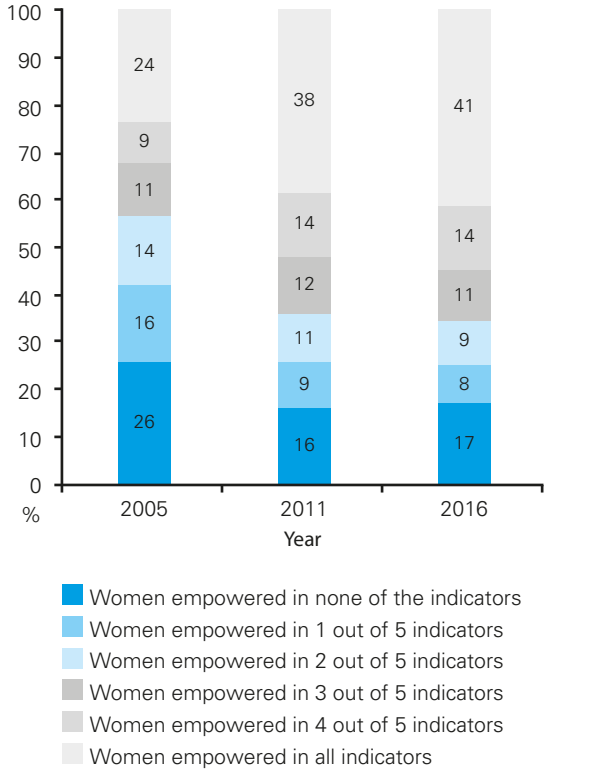
Across regions, the rate of women's empowerment in the Education domain was lowest in Somali region in 2016, at only 8 per cent, followed by Afar (20 per cent), and SNNPR (24 per cent) (see Annex 70).

## Attitudes towards wife-beating domain

Trend analysis shows that the proportion of women not in union who are empowered in all indicators of the domain Attitudes towards wife-beating has increased continuously over the years, from 24 per cent in 2005 to 38 per cent in 2011 and 41 per cent in 2016.

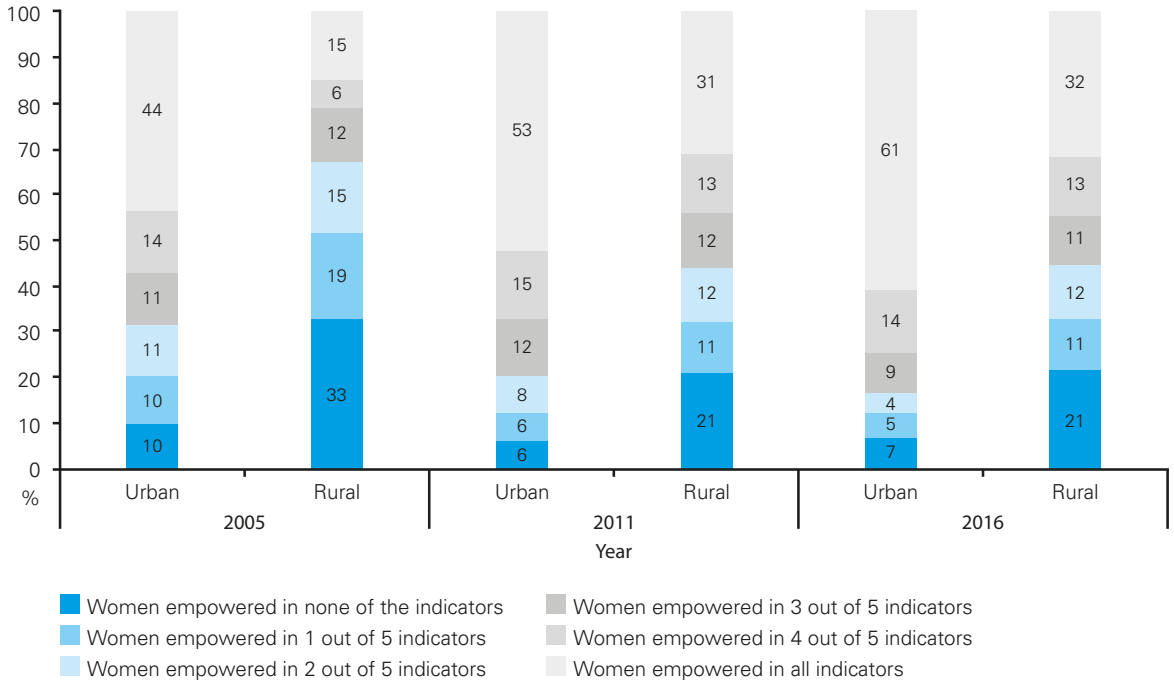
Incidence of women's empowerment in the domain has increased at an increasing trend in both urban and rural areas, but the gap is wide. Sixty-one per cent of women not in union in urban areas were empowered in the Attitudes towards wife-beating domain in 2016 compared to 32 per cent of their counterparts residing in rural areas. The proportion of women in urban

**Figure 59 Trends in empowerment in the Attitude towards wife-beating domain, women not in union (%)**




Source: Authors' calculations using EDHS data.

**Figure 60 Trends in empowerment in the Attitude towards wife-beating domain, women not in union (%)**




Source: Authors' calculations using EDHS data.

areas empowered in all indicators of this domain has increased from 44 per cent in 2005 to 52 per cent in 2011 and to 61 per cent in 2016. Only 7 per cent of women in urban areas were not empowered in any of the domain's indicators in 2016, compared to 22 per cent of women residing in rural areas.

Across regions, incidence of empowerment in the Attitude towards wife-beating domain was the lowest in SNNPR (32 per cent) and Oromia and Afar (38 per cent each) in 2016 and there are large geographical disparities. More than three quarters of women in Addis Ababa – 76 per cent – were empowered in all indicators of the domain in 2016, along with 68 per cent of women in Harari and 60 per cent of women in Dire Dawa (see Annex 71).

## Relationship between the domains of empowerment for women not in union

Both Pearson's and the Spearman rank-order correlation test show statistically significant correlations between each of the three pairs of domains (see Annex 72). The results for the strength and direction of the relationship between the domains, controlled for some characteristics of the woman, are shown in Table 6.

Model 1 shows that empowerment in the Economic domain is not associated with empowerment in the Education domain or the Attitudes towards wife-beating domain. It is

**Table 6 Relationship between domains of women's empowerment, ordered logistic regression results, women not in union**

| Coefficients and standard deviations of the ordered logistic to test for the relationships between domains of women's empowerment | | |
|---|---|---|
| Independent variables | Dependent variables | |
| | Empowerment in the Economic domain (Model 1) | Empowerment in the Attitudes towards wife-beating domain (Model 2) |
| Empowerment in the Education Domain | 0.066<br>(0.916) | 0.585**<br>(0.916) |
| Empowerment in the Attitudes towards wife-beating domain | 0.035<br>(1.815) | 0.1<br>(0.493) |
| Age of the woman | 0.247**<br>(8.950) | 0.070*<br>(8.950) |
| Age of the woman squared | -0.004**<br>(559.9) | -0.001*<br>(559.9) |
| Rural area | -1.076**<br>(0.497) | -0.960**<br>(0.497) |
| Household head is a woman | 0.387**<br>(0.491) | -0.006<br>(0.491) |
| Woman is exposed to media | 0.178<br>(0.475) | 0.155*<br>(0.475) |
| Number of observations | 3768 | 3768 |
| Prob > chi2 | 0.000 | 0.000 |

*p<0.05; **p<0.01

Source: Authors' calculations using EDHS data.

however positively associated with women's age but at a diminishing rate. In other words, an additional year of age increases the likelihood of being economically empowered, but the likelihood increases at a diminishing rate for older women. Women not in union residing in rural areas have a lower likelihood of being economically empowered. Belonging to a household headed by a woman is also positively associated with being empowered in the Economic domain among women not in union. Exposure to media shows no statistically significant association with empowerment in the Economic domain.

Model 2 investigates the relationship between the domain Attitudes towards wife-beating and the Education and Economic domains, controlling for some of the woman's characteristics. The results show that empowerment in the Education domain increases the likelihood of being empowered in Attitudes towards wife-beating domain, while association with empowerment in the Economic domain is not statistically significant. The age of the woman is also important for predicting empowerment in the Attitudes towards wife-beating domain; the woman is more likely to be empowered in this domain with each additional year of age, albeit at a diminishing rate. Regression results also show that women residing in rural areas are less likely to be empowered in the domain, while exposure to media significantly increases the likelihood of being empowered in it.

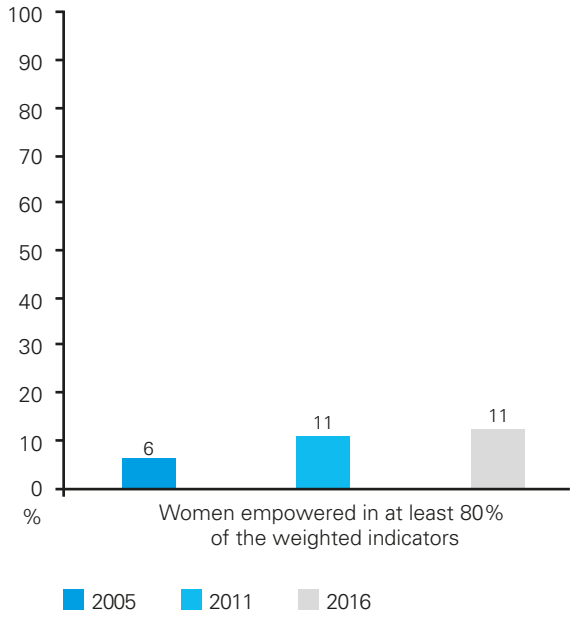
## Trends in Women's Empowerment Index, women not in union

The percentage of women not in union who are empowered has almost doubled over the years, from 6 per cent in 2005 to 11 per cent in 2011 and 2016. Data show that the progress has stagnated since 2011, meaning 89 per cent of all women not in union are not empowered.

There has been steady progress in the empowerment of women not in union in urban locations, from 18 per cent in 2005, to 23 per cent in 2011 and up to 31 per cent in 2016. In rural areas, despite the significantly low base, women's empowerment incidence increased from 2 per cent in 2005 to 5 per cent in 2011 and up to 6 per cent in 2016. The large gap in incidence of women's empowerment between urban and rural areas calls for dedicated attention in policymaking.

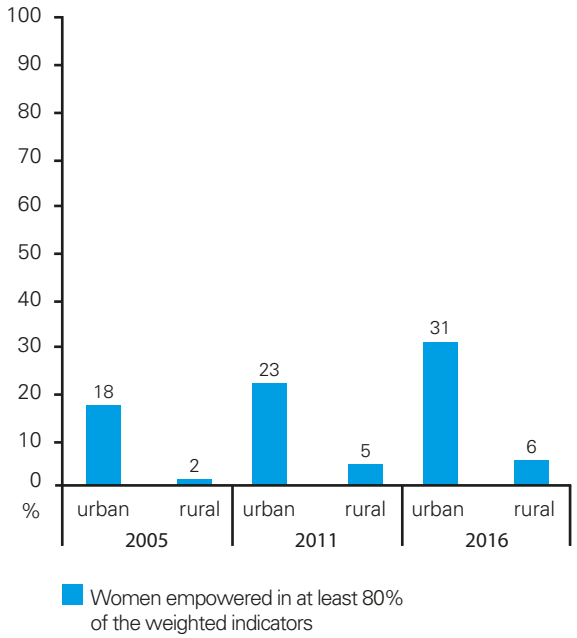
There have been improvements in the empowerment of women not in union across all regions, most notably in Addis Ababa, Harari, Gambella, Dire Dawa and Tigray. Several other regions, such as Afar, Amhara, Oromia and Benishangul-Gumuz started from lower rates of empowerment of below 5 per cent in 2005 and reached rates well over 10 per cent in 2016. Only Somali and SNNPR regions show modest improvements in the rates of women's empowerment over years, having reached

**Figure 61 Trends in empowerment of women not in union (%)**




Source: Authors' calculations using EDHS data.

**Figure 62 Trends in empowerment of women not in union by urban/rural area (%)**




Source: Authors' calculations using EDHS data.

incidence of only 5 per cent and 7 per cent, respectively, in 2016 from slightly above 3 per cent in 2005.

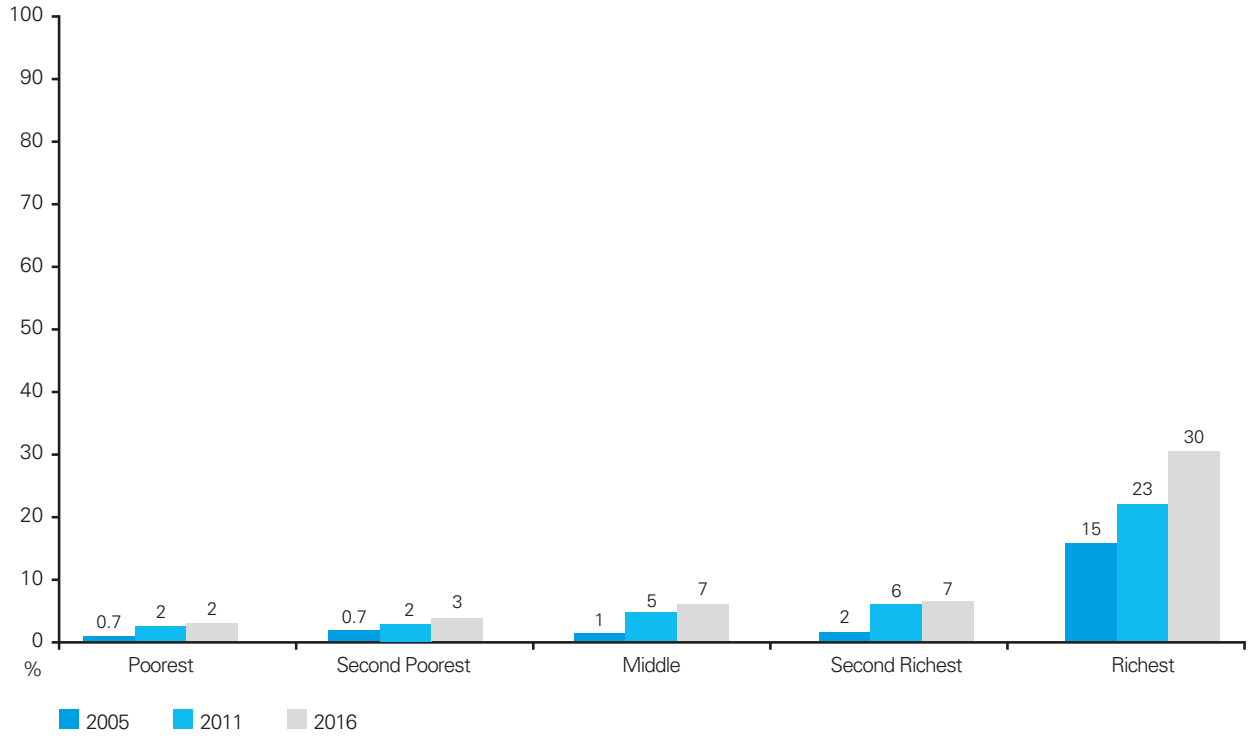
As with women in union, women's empowerment is only noticeably 'manifested' in the richest wealth quintile, even though improvements can be observed across all the wealth quintiles. In the poorest quintile, the proportion of empowered women not in union increased from 0.7 to 2.2 per cent between 2005 and 2016. In the richest quintile its incidence doubled from 15 to more than 30 per cent. The drastic disparity in women's empowerment across wealth quintiles hints to major issues with equity in the country. These must be tackled in a comprehensive manner, including major investment in the education sector, improving labour market conditions, generation of quality jobs, development of gender-sensitive cash plus social protection programmes, and dedicated efforts to slowly tackle sociocultural norms associated with GBV, harmful practices, and definition of women's and men's roles in and by society.

**Table 7 Trends in empowerment of women not in union by region**

| Year | 2005 | 2011 | 2016 |
|---|---|---|---|
| Addis Ababa | 27.2% | 33.9% | 43.2% |
| Afar | 3.5% | 7.1% | 12.9% |
| Amhara | 2.9% | 7.7% | 13.9% |
| Benishangul-Gumuz | 5.4% | 11.1% | 14.5% |
| Dire Dawa | 20.0% | 16.4% | 23.6% |
| Harari | 23.8% | 22.4% | 31.0% |
| Gambella | 4.1% | 15.1% | 22.2% |
| Oromia | 3.5% | 8.7% | 10.8% |
| SNNPR | 3.6% | 8.0% | 7.2% |
| Somali | 3.2% | 3.9% | 5.3% |
| Tigray | 10.7% | 10.5% | 15.0% |

Source: Authors' calculations using EDHS data.

**Figure 63 Trends in empowerment of women not in union by wealth quintile (%)**




Source: Authors' calculations using EDHS data.

# Women's empowerment and children's wellbeing

## Introduction

Investing in children is critical for human capital development and long-term child development (Alderman, Hoddinott and Kinsey 2006; Behrman 1996). Healthy and well-educated children grow up to be productive citizens who contribute to the economic growth of the country. Research has found that investments in children and their life chances are strongly correlated with maternal care and wellbeing (Huffman et al. 1999; WHO 2013; Smith et al. 2003). In fact, given that women are, in many instances, the primary caretakers of children, they can allocate and steer intra-household resources to benefit children (Smith et al. 2003). It has also been found that mothers have influence on factors that are critical to child wellbeing, including food preparation and storage, feeding practices, psychosocial care, hygiene, health, new-born care and education (Engle et al. 1999). This chapter assesses the relationship between children's wellbeing and women's empowerment in the context of Ethiopia.

## Literature review

There is a body of literature on the association between women's empowerment and control over resources and improvements in children's wellbeing outcomes (Quisumbing and Maluccio 2003; Bhagowalia et al. 2012; Allendorf 2007; Skoufias 2005; Ackerson and Subramanian 2008; Shroff et al. 2011; van den Bold, Quisumbing, and Gillespie 2013; Cunningham et al. 2015). The section below presents evidence on the relationship between women's empowerment and child wellbeing outcomes, including the dimensions of nutrition, health, education and protection.

### Relationship between women's empowerment and child nutrition

A study by Alaofè et al (2017) conducted in Kalalè District of Northern Benin finds a positive association between women's empowerment level and child's dietary diversity score (DDS). The same paper finds that empowerment measured by mobility of the mother is positively associated with children's weight-for-height (WHZ) and height-for-age (HAZ), while the decision-making power of the mother is correlated with children's WHZ and children's weight-for-age (WAZ). Similarly, in Uganda, Ickes et al. (2017) employ a maternal capabilities index and finds that empowerment is positively associated with a more diverse and acceptable diet for children. In Northern Ghana, Zereyesus (2017) found that empowerment has a positive effect on households' health and nutritional status, in that it is likely to reduce stunting, wasting and underweight among children and women. However, in other contexts such as Bangladesh, Malapit et al (2015) find scattered evidence of association between Women's Empowerment Agriculture Index (WEAI), developed by Alkire et al (2013) and children's nutritional status. The same authors also find that the household head's, especially father's, educational attainment is associated with improved nutrition of their children (Malapit et al. 2015).

Using the Feed the Future population-based survey in Ghana, Malapit and Quisumbing (2015) investigate the association between the WEAI and children's nutrition and find a positive relationship with infant and young child feeding practices but only weak association with other nutritional outcomes. Furthermore, Cunningham et al (2015) review 1,661 studies on South Asia published between 1990 and 2012 that document evidence on the relationship between women's empowerment and child nutrition. The review systematizes evidence on three empowerment domains: control of resources and autonomy, workload and time, and social support. The review reveals that empowerment is generally associated with better child anthropometric outcomes and nutritional intake, but the findings are mixed due to differences in population characteristics, the way empowerment was measured, and specifics of context.

### Relationship between women's empowerment and children's health

Literature also shows evidence of correlation between women's empowerment and children's health. In Senegal, Shimamoto and Gipson (2015) find that women's empowerment is positively associated with skilled birth attendance. Similarly, in Nigeria and India, Ibrahim et al (2015) find a statistically significant relationship between active participation of women in

household decision-making and children's health status. In Bangladesh, Begum and Sen (2005) study interconnections between women's empowerment and maternal health, children's health, and chronic poverty. The proxy indicators used to measure women's agency included education (level of formal schooling), exposure to media (radio, television or newspaper), and their role in domestic decision-making. The findings show that women's agency can encourage strategic investments in children, including adoption of improved health care practices for boys and girls in the women's care.

### Relationship between women's empowerment and children's education

The literature also shows positive effects of women's empowerment on children's education. In Bangladesh, Malapit et al. (2015) find that the educational attainment of a father who is head of the household is positively associated with better educational outcomes for children. However, younger girls, aged 6–10 years, and older boys and girls, aged 11–17 years, are more likely to have better education outcomes if their mothers have higher educational attainment. The results concerning parental education suggest that fathers' empowerment may be reflecting a 'wealth' effect that is invested in children's nutrition and education when they are young, while mothers' empowerment becomes more important for keeping older children, regardless of sex, in school. Furthermore, Magnus et al (2014) conducted a family survey in Nepal to investigate whether women's empowerment leads to more education, particularly for girls. The study finds a statistically significant relationship between women's empowerment and the education of boys and girls.

### Relationship between women's empowerment and FGM among girls

Evidence about the relationship between women's empowerment and FGM is rather limited. A study conducted in East Gojjam Zone in Western Amhara, Ethiopia (Andualem 2016) found that the main factors associated with absence of FGM are the educational attainment of the parents, the daughter's age, residence, health, education, culture, frequent health extension follow-ups, and participation in anti-FGM interventions and information campaigns.

## Methodology

This study employs binary logistic regression analysis to assess the relationship between selected dimensions of children's wellbeing - health, nutrition, education and child protection (FGM) – and women's empowerment. The EDHS 2016 dataset is used for the analysis. The indicators to measure each of the aforementioned dimensions have been contextualized to capture the specific traits of vulnerability in Ethiopia. The contextualization of measurements involved inputs from national and international stakeholders that are active in designing and implementing development actions in the country. The choice of indicators was also driven by prior research on child wellbeing and international recommendations and agreements, most notably those set out by the World Health Organization (WHO), UNESCO, UNICEF, and the Convention of the Rights of the Child (CRC).

Table 8 presents the dimensions of child wellbeing, the indicators used to construct them, and the thresholds used to define children as deprived/non-deprived in the dimensions.

The dependent variables – dimensions of children's wellbeing – used in the logistic regression analysis are constructed as follows:

- The dimension of Nutrition is measured for children aged 0-4 years and is constructed using the indicators of wasting, underweight, stunting, infant young and child feeding (IYCF) and vitamin A supplementation;
- The dimension of Education is measured for children aged 7-17 years and is constructed using three indicators: school attendance, delay in schooling, and literacy.
- The dimension of Health is divided into two sub-dimensions: Health and Health-related Knowledge. The Health sub-dimension measures utilization of healthcare services among children under five years (and their mothers) using the following indicators: immunization, skilled birth attendance, ANC, and mother's knowledge on ORS for treatment of diarrhoea. Given that there are no indicators to measure health outcomes or health-seeking behaviour of children aged 5-17 years, for the Health-related knowledge sub-dimension, health-related knowledge on ORS and HIV/AIDS transmission and prevention are used as proxy indicators.
- The dimension of Child Protection covers FGM and is measured by its prevalence in the household for girls 0-14 years and its incidence for adolescent girls aged 15-17 years.

**Table 8 Parameters used to measure children's wellbeing across different dimensions**

| Dimension | Indicator and age group | Threshold/Definition of deprivation |
|---|---|---|
| Nutrition | Wasting, underweight | Child's weight-for-age is -2SD below that of the reference population |
| | IYCF (0-23 months) | Child is not exclusively breastfed (0-6 months) and child is not fed a minimum acceptable diet (MAD) (6-23 months). Children of age 6-23 months are considered deprived of minimum dietary diversity if their food intake includes less than 4 out of 7 food groups: (1) Grains, roots, and tubers; (2) Legumes and nuts; (3) Dairy products (milk, yogurt, cheese); (4) Flesh foods (meat, fish, poultry, and liver/organ meat); (5) Eggs; (6) Vitamin A-rich fruits and vegetables; and (7) Other fruits and vegetables. In terms of minimum meal frequency (MMF), children who are breastfed are considered to receive MMF if they are fed solid, semi-solid or soft foods at least twice a day (at age 6-8 months) and at least three times a day (at age 9-23 months). Children who are not breastfed are considered to meet the minimum MMF if they are fed solid, semi-solid or soft foods at least four times a day. |
| | Vitamin A supplement (7-59 months) | Child has not received a vitamin A supplement during the last 6 months |
| | Stunting (under five) | Child's height-for-age is -2SD below that of the reference population |
| Education | School attendance (7-17 years) | Child is not attending school |
| | Delay in schooling/ Grade-for-age (9-17 years) | Child of primary school age (9-14 years) is attending school with two or more years of delay; child of secondary school age (15-17 years) is attending school with three or more years of delay |
| | Literacy (15-17 years). | Child cannot read a full sentence |
| Health | Full immunization (under five) | Child has not received vaccination according to national immunization schedule (children under 11 months), or is not fully immunized (aged 11-59 months). Following the national vaccination schedule and allowing for 1 month flexibility in getting vaccinated, for children younger than 11 months, the thresholds applied were as follows: BCG (1 month); DPT-HepB-Hib dose 1 and Polio dose 1 (3 months); DPT-HepB-Hib dose 2 and Polio dose 2 (4 months);DPT-HepB-Hib dose 3 and Polio dose 3 (5 months); Measles (10 months). Children aged 11-59 months are considered deprived in immunization if they have not received all the vaccines listed above. Due to the large proportion of missing values, the data have been imputed for children aged 3-4 years using information from their younger siblings |
| | Skilled birth attendance (under 1) | Child was delivered with no assistance or with the assistance of persons other than: doctor, nurse, midwife, HEW, or other health personnel |
| | Adequate antenatal care (under 1) | Child's mother had less than 4 ANC visits during pregnancy or 4+ performed by a person other than: doctor, nurse, midwife, HEW, or other health personnel |
| | Mother's knowledge of oral rehydration solution (ORS) for treating diarrhoea (12-59 months) | Child's mother does not have knowledge that ORS can be used for treating diarrhoea |

| | | |
|---|---|---|
| Health-related knowledge | Mother's knowledge of oral rehydration solution for treating diarrhoea (5-14 years) | Child lives in a household where no adolescent or adult female knows about ORS for treatment of diarrhoea |
| | Basic knowledge on HIV/AIDS transmission and prevention (5-17 years) | None of the household members of a child aged 5-14 years has knowledge about HIV/AIDS transmission and prevention; child aged 15-17 does not have knowledge on HIV/AIDS transmission and prevention. When individual information is not available, information from adult household members is imputed. A child is deprived if she/he and all household members: (i) have never heard about HIV/AIDS; (ii) do not know that transmission of HIV can be prevented by having sex with one partner who has no other partners or by always using condoms during sex; (iii) do not reject any of the two most common misconceptions about transmission of HIV – that HIV can be spread by mosquito bites or by sharing food with a person living with HIV; or (iv) Think that or do not know that a healthy-looking person can have HIV. |
| FGM | Female genital mutilation among girls | Girls aged 15-17 have undergone FGM; At least one daughter aged 0-14 years has undergone FGM. |

A child is considered deprived in the dimension of wellbeing if he or she is deprived in at least one of the indicators measuring that dimension. This definition is in line with the union approach adopted by UNICEF's Multiple Overlapping Deprivation Analysis (MODA) methodology.[42] Each of the dependent variables – selected measures of children's wellbeing – are expressed as binary variables, with 1 denoting that the child is deprived of that specific need or service and 0 denoting that the child is not deprived.

The set of independent variables includes women's empowerment, coded as a binary variable with 1 denoting that the woman is empowered in at least 80 per cent of the weighted indicators of the WEI, and 0 indicating the opposite. Using 80 per cent of the total weighted indicators to define women's empowerment builds on the methodological guidelines adopted by Alkire et al (2013) for constructing a similar measurement, the Women's Empowerment Agriculture Index (WEAI) and other related academic research. The other regressors include children's individual and household characteristics, the selection of which was made based on existing studies. All control indicators were tested for collinearity before they were included in the model. The set of controls includes: area of residence (urban/rural), region, mother's BMI, wealth quintile, number of children in the household, age of the child, gender of the child, father's employment status, father's educational attainment, knowledge of female household members about ORS for treatment of diarrhoea, gender of the household head, mother's exposure to media, mother's coverage by health insurance, distance to the healthcare facilities, and mother's ability/willingness to go to the healthcare facility alone.

Initially, bivariate logistic regressions were carried out between each of the dependent variables (dimensions of child wellbeing) and the independent variables. Thereafter, five multivariate logistic regressions were run with each dimension of child wellbeing as the dependent variable. Only the variables that showed a statistically significant relationship in the bivariate logistic regressions were kept in the multivariate logistic regression analysis.

Given that around 65 per cent of women not in union do not have children, the sample was too small to calculate the relationship between women's empowerment and child wellbeing for them. Also, given that some of the regressions were applicable only to sub-samples of children (for example children younger than five years), the sample was reduced even further. Therefore, the regression analysis is restricted to (i) married

42 De Neubourg, C., Chai, J., de Milliano, M., Plavgo, I. and Wei, Z. (2012). Step-by-step guidelines to the Multiple Overlapping Deprivation Analysis (MODA). UNICEF Office of Research Working Paper. Retrieved from: https://www.unicef-irc.org/publications/pdf/iwp_2012_10.pdf

women with children and (ii) women who are cohabiting with their partners and have children.

## Findings

A bivariate logistic regression was carried out to test for the relationships between each dimension of child wellbeing and women's empowerment, controlling for child-, household-, and woman-level characteristics. Findings in Annex 73 show a significant and negative relationship between the women's empowerment status and deprivation in the five dimensions of child wellbeing. The results imply that children whose mothers are empowered are less likely to be deprived in education, health, health-related knowledge, nutrition and protection. In line with this finding, empowerment in the Economic, Education, Familial/Interpersonal and Attitudes towards wife-beating domains were tested separately in relation to child wellbeing dimensions, and also showed a similar negative relationship with children's deprivation.

The other control variables that show a statistically significant relationship with children's deprivation in nutrition include area of residence (urban/rural), region, mother's nutritional status, wealth quintiles, age of the child, father's educational attainment, and knowledge of household members on ORS for treatment of diarrhoea (see Annex 73).

Other factors that show a statistically significant relationship with children's deprivation in health include area of residence (urban/rural), region, wealth quintile, number of children in the household, age of the child, father's employment status, father's education level, knowledge of household members on ORS for treatment of

**Table 9 Average marginal effects of the probability of the child being deprived in each dimension of wellbeing**

| | Model (a) | Model (b) | Model (c) | Model (d) | Model (e) |
|---|---|---|---|---|---|
| Dimension of child's wellbeing | Nutrition (<5 years) | Health (<5 years) | Health-related knowledge (5-17 years) | Education (7-17 years) | FGM (Girls 0-17 years) |
| Mother is empowered in 80% of the weighted indicators | -0.118 (2.49)* | -0.018 (0.32) | -0.193 (2.89)** | -0.234 (2.66)** | -0.169 (1.70) |
| Rural area | -0.010 (0.24) | 0.101 (2.11)* | 0.112 (1.78) | 0.143 (4.40)** | 0.158 (1.74) |
| Region (Addis Ababa=0) | | | | | |
| Tigray | -0.172 (3.98)** | -0.050 (0.88) | -0.198 (2.93)** | 0.089 (1.09) | -0.028 (0.29) |
| Afar | 0.052 (1.01) | 0.268 (4.34)** | -0.166 (2.01)* | 0.22 (2.58)** | 0.574 (6.10)** |
| Amhara | -0.074 (1.70) | 0.162 (2.84)** | -0.067 (0.98) | 0.213 (2.70)** | 0.214 (2.43) |
| Oromia | -0.076 (1.72) | 293 (5.30)** | -0.012 (0.18) | 0.341 (4.43)** | -0.064 (0.68) |
| Somali | 0.038 (0.75) | 0.31 (5.34)** | 0.253 (3.53)** | 0.304 (3.61)** | 0.247 (2.90)** |
| Benishangul-Gumuz | -0.117 (2.58)** | -0.002 (-0.03) | -0.012 (0.18) | 0.177 (2.14)* | 0.087 (0.95) |
| SNNPR | -0.100 (2.34)** | 0.189 (3.23)** | -0.008 (0.11) | 0.265 (3.44)** | 0.043 (0.48) |
| Gambella | -0.133 (2.71)** | 0.198 (3.70)** | -0.008 (0.13) | 0.145 (1.66) | -0.100 (1.04) |
| Harari | 0.063 (1.24) | 0.238 (3.85)** | 0.043 (0.65) | 0.236 (2.76)** | 0.036 (0.42) |
| Dire Dawa | -0.140 (3.06)** | 0.071 (1.11) | 0.097 (1.59) | 0.157 (1.72) | 0.073 (1.00) |

| | Model (a) | Model (b) | Model (c) | Model (d) | Model (e) |
|---|---|---|---|---|---|
| Mother is undernourished (BMI <18.5 kg/ m2) | 0.067 (3.00)** | | | | |
| No one in the households has knowledge about using ORS for treatment of diarrhoea | 0.066 (3.75)** | | | | |
| Wealth quintile (poorest=0) | | | | | |
| Poorer | -0.018 (0.66) | -0.053 (1.60) | -0.028 (0.86) | -0.098 (3.76)** | -0.006 (0.18) |
| Middle | -0.033 (1.18) | -0.068 (2.35)* | -0.086 (2.76)* | -0.138 (5.28)** | 0.041 (1.08) |
| Richer | -0.013 (0.41) | -0.121 (4.07)** | -0.133 (3.85)** | -0.211 (8.06)** | 0.008 (0.22) |
| Richest | -0.120 (3.12)** | -0.215 (5.74)** | -0.209 (5.23)** | -0.327 (9.40)** | -0.008 (0.11) |
| Age of the child | | | | | 0.016 (8.29)** |
| 1 year | 0.356 (7.34)** | -0.221 (7.93)** | | | |
| 2 years | -0.101 (3.43)** | -0.205 (6.68)** | | | |
| 3 years | -0.114 (4.01)** | -0.35 (13.27)** | | | |
| 4 years | -0.097 (3.64)** | -0.345 (12.90)** | | | |
| 8 years | | | | -0.146 (6.22)** | |
| 9 years | | | | -0.218 (8.45)** | |
| 10 years | | | | -0.139 (5.05)** | |
| 11 years | | | | -0.008 (0.24) | |
| 12 years | | | | 0.051 (1.77) | |
| 13 years | | | | 0.141 (4.98)** | |
| 14 years | | | | 0.179 (5.60)** | |
| 15 years | | | | 0.213 (5.56)** | |
| 16 years | | | | 0.203 (5.66)** | |
| 17 years | | | | 0.289 (7.20)** | |
| Child is a girl | | | | -0.013 (0.87) | |
| There are 3 or more children in the household | 0.006 (0.31) | 0.060 (3.28)** | | 0.054 (3.07)** | |
| Father has completed secondary or higher education | -0.048 (1.94) | | -0.095 (2.52)* | -0.093 (3.42)** | |

| | Model (a) | Model (b) | Model (c) | Model (d) | Model (e) |
|---|---|---|---|---|---|
| Father has a paid job | 0.005 (0.24) | -0.046 (2.09)* | | -0.048 (1.86) | |
| Mother is covered by health insurance | | -0.019 (2.45) | | | |
| Mother does not want to go alone to the healthcare facility | | -0.007 (0.32) | | | |
| Health facility is too far from the household | | 0.038 (1.71) | 0.031 (1.21) | | |
| Mother is exposed to media | | | -0.067 (3.07)** | | -0.016 (0.49) |
| Household head is a woman | | | | | 0.046 (1.30) |
| Number of observations | 5,630 | 5,761 | 10,549 | 8,521 | 3,806 |
| * p<0.05; ** p<0.01 | | | | | |

Source: Authors' calculations using EDHS data.

diarrhoea, mother's exposure to media, age of the mother, and mothers' barriers with accessing healthcare facilities.

Other factors that are associated with deprivation in health-related knowledge include area of residence (urban/rural), region, wealth quintile, age of the child, father's employment status, father's educational attainment, mother's age and mother's exposure to media.

Other control variables associated with deprivation in education include area of residence (urban/rural), region, wealth quintiles, number of children in the household, age of the child, father's educational attainment, father's employment status and mother's age.

Finally, the other control variables that are associated with FGM prevalence and incidence amongst girls include area of residence (urban/rural), region, wealth quintile, number of children in the household, age of the child, father's educational attainment, mother's exposure to media, gender of the household head and mother's age at first birth.

It must be highlighted that the gender of the child does not show a statistically significant relationship with any of the wellbeing outcomes – nutrition, health, health-related knowledge or education.

Table 9 displays the results of the multivariate regression analyses for each dimension of children's wellbeing (see Annex 74 for results of tests of regression validity, goodness-of-fit and multicollinearity between control variables).

## Women's empowerment and children's nutrition

Model a shows the regression results for the dimension of nutrition in relation to observed indicators for children under five. In line with the results of Alaofè et al (2017) in Kalalè District of Northern Benin, Ickes et al (2017) in Uganda and Zereyesus (2017) in northern Ghana, the results show that, in Ethiopia as well, children whose mothers are empowered are less likely to be deprived in nutrition. Absence of knowledge, however, such as that of ORS, puts children at higher risk of deprivation. The skills and knowledge that mothers and other household members have are therefore likely to benefit children in terms of feeding practices and utilization of nutritional supplements provided by healthcare facilities such as vitamin A.

Moreover, children from the richest wealth quintile are overall less likely to be deprived in nutrition compared to children in the poorest quintile. Notably, children from the second to fourth quintile are not significantly better off than children from the poorest quintile. These results pinpoint issues with food insecurity and/or lack of financial means among households to secure adequate nutrition.

In terms of regional distribution, children from Tigray, Benishangul-Gumuz, SNNPR, Gambella and Dire Dawa are less likely to be deprived in nutrition than children living in Addis Ababa. Children from the other regions are not significantly better off

than children in Addis Ababa. This may reflect the successful implementation of food programmes and information campaigns – such as the Productive Safety Net Programme (PSNP) – that provide cash and/or food transfers, technical assistance and training to target households that are chronically food insecure across regions. So far, all regions with significant positive results in relation to child nutrition have been covered by such programmes at some point in time over the past decade.

With respect to the age of the child, data show that older children are overall less likely to be deprived in nutrition than infants. This result stems from methodological factors, such as the fact that deprivation in nutrition among children under 24 months includes the IYCF indicator, which shows a very high deprivation rate of 93 per cent in 2016.

## Women's empowerment and children's health

Model b shows the results of factors associated with deprivation of children under five in health. Contrary to the literature, the findings show that women's empowerment is not related to children's deprivation in health. Possible explanations for the result could be: (i) Methodological – as deprivation in health was constructed using the indicators of full immunization and mother's access to adequate ANC and skilled birth attendance (only the two latter variables, for children under one), or (ii) Issues with accessibility and availability of services for children under five and mothers during pregnancy and childbirth, which need to be investigated further through health sector bottleneck analysis. Studies conducted in other developing countries such as Senegal (Shimamoto and Gipson 2015), Nigeria and India (Ibrahim et al 2015) and Bangladesh (Begum and Sen 2005) found that deprivation in child's health is negatively correlated with women's empowerment.[43] In other words, children whose mothers are empowered are less likely to be deprived in health.

Other indicators may contextualize this evidence. Results show that children that have reached their second, third and fourth birthdays are less likely to be deprived in the health dimension than children in their first year of life. One of the possible explanations for this finding could be that there is a wider timeframe for children to get access to full immunization than for children under one. In addition, as children grow older, they may indeed benefit from available vaccinations and from improvements in mothers' knowledge of specific illnesses.

Children living in households with more than three children are more likely to be deprived in the health dimension. Having more children in the household may put a strain on time and financial resources in the household, which may hinder access to basic healthcare services like ANC, skilled birth attendance and immunization. This finding is also supported by the result that children in wealthier households, and those whose fathers are in continuous paid jobs, are less likely to be deprived in health. Availability of financial resources may therefore play a significant role in securing access to and utilization of healthcare services among younger children in Ethiopia.

Furthermore, children in rural areas are more likely to be deprived in health than children residing in urban areas, hinting to further issues with availability and accessibility of healthcare services and associated public services, such as road infrastructure, public transportation and the like that enable access to this basic service. The regional-level findings add to contextualization of this assumption. With the exception of Tigray, Benishangul-Gumuz and Dire Dawa that show no significant correlation with deprivation in health, residing in all regions other than Addis Ababa is related with an increased chance of being deprived in health. The widespread distribution of child deprivation in health therefore requires a nationwide strategy for tackling this vulnerability while simultaneously having in mind which regions and aspects need to be prioritized in each of them to ensure the effectiveness of interventions.

Factors such as distance to health facility and mothers' coverage by health insurance are not significant predictors of deprivation in health among children under five: these findings require further investigation.

## Women's empowerment and health-related knowledge

Model c presents findings on factors associated with deprivation in health-related knowledge. It is constructed using the indicators of knowledge of ORS for treating diarrhoea and comprehensive

43 In these paper, children's deprivation in health was measured through indicators of full immunization, skilled birth attendance, adequate antenatal care and mother's knowledge of specific illnesses.

knowledge about HIV/AIDS transmission and prevention. Health-related knowledge, measured by at least one household member having knowledge on health issues, is used as a proxy for health for children aged 5-17 years in the absence of other indicators measuring health outcomes, status, or accessibility and/or utilization of healthcare services.

The results show that children whose mothers are empowered are less likely to be deprived in the dimension of health-related knowledge. This is not surprising, as health-related knowledge is strongly correlated with educational attainment – one of the constitutive indicators of the WEI. Therefore, it is also not surprising to see the results showing that children living in households with media exposure are also less likely to be deprived in health-related knowledge. In addition, the literature shows that access to information and communication technology is an important tool for acquiring knowledge for disease prevention: therefore this result is important for policy and programme design purposes.

At the regional level, children living in Tigray, Afar, and Somali are less likely overall to be deprived in the dimension of health-related knowledge than children living in Addis Ababa. These are regions with reoccurring cases of diarrhoea and other diseases (such as cholera) and may reflect successful information campaigns that have occurred following past events. Other regions are not significantly different in deprivation in the dimension of health-related knowledge to Addis Ababa.

Other factors that are likely to decrease the likelihood of being deprived in the dimension of health-related knowledge are wealth (children living in households in the three richest quintiles compared to the poorest quintile) and father's educational attainment. The financial resources and educational background of adults are thus assumed to be reliable channels for building a solid base of health-related knowledge that benefits children across households in Ethiopia.

## Women's empowerment and children's education

Model d presents the results on factors associated with children's deprivation in education. There is a significant and negative relationship between women's empowerment and children's deprivation in education. In other words, children whose mothers are empowered are significantly less likely to be deprived in education. This finding is in line with the literature (for example Magnus et al (2014)), and demonstrates the significant role played by women in children's educational attainment.

The results for other factors provide additional relevant evidence on tackling deprivation in education in Ethiopia. The age of children is a significant predictor of their deprivation in education. Children at primary school (aged 8, 9 and 10 years) are less likely to be deprived in education (i.e. to not attend school, to attend school with delay or both). However, children of older ages – 13 years and above – are more likely to be deprived in education. The effects observed for older children may be due to the progressive dropouts in school, starting with the transition into secondary education. It may also reflect the entrance of children into the labour market, as children aged 15 and above qualify as young workers and may choose employment opportunities due to financial hardships faced by their households, resulting in school abandonment.

Furthermore, children living in households with more than three children (above the median) are also more likely to be deprived in education. A higher number of children puts pressure on household resources, which may in turn negatively affect the educational opportunities of these children.

There is a regional polarization effect in the education of children in Ethiopia: those living outside Addis Ababa are more likely to be deprived. Across regions, children living in Oromia, Somali, SNNPR and Harari are more likely to be deprived in education than children living in the capital. These figures suggest regional disparities in availability and accessibility of educational services, in addition to other factors. Children in rural areas are also more likely to be deprived in education than children in urban settings. This is expected, as school infrastructure is often less developed in rural areas than in urban settings, which may reflect negatively on the educational opportunities, learning outcomes, and performance of children in rural areas with severe negative implications on equity.

Furthermore, the higher the wealth quintile, the lower the likelihood that the children are deprived

in education. Higher wealth allows for better education opportunities, in that it mitigates the household budget constraints that keep children away from school.

As was found in the study of Malapit et al (2015) conducted in Bangladesh, children in Ethiopia whose fathers have higher educational attainment are less likely to be deprived in education compared to children whose fathers have lower levels of education. Parents' education attainment impacts children's deprivation in education in several ways: i) through improved employment chances of parents which in turn increases households' income, ii) parents' understanding of importance of education for improved livelihoods, hence, willingness to invest in and support their children; and iii) parents' active involvement in their children's learning.

Gender of child and father's employment status are not significant predictors for children's education in Ethiopia. The absence of a gender effect is encouraging, as it shows that boys and girls do not differ significantly in deprivation in education controlling for all other indicators.

## Women's empowerment and FGM

Model (e) shows the findings on factors associated with incidence of FGM among girls aged 0-17 years. The correlation between women's empowerment and FGM is insignificant, meaning that there are no consistent effects to conclude that empowerment has a positive or negative effect on FGM in the analysed sample. However, the fact that a household has a daughter who has undergone FGM is a reflection of serious deprivation and may indicate persistent socio-cultural norms perpetuating the practice. Moreover, empowerment values and skills may appear later in the life of many sampled women, after their daughter has been mutilated, in which case the absence of a significant result may reflect a delay in the observed characteristics of empowerment compared to when FGM occurred.

Of all indicators, only the age of the girl and the region show significant associations with FGM. Girls of older age are more likely to have undergone FGM. This may reflect two different aspects: i) That girls undergo FGM later in life as they approach their marriage age and FGM remains a strong expectation culturally, and/or ii) That parents are generally less accepting of the practice, hence not circumcising their younger daughters. Having in mind that the factors included in the regression analysis are constrained by data availability in EDHS, a more in-depth investigation of factors associated with FGM is necessary in the future to inform policies and programs tackling this harmful practice.

At the regional level, girls in Afar, Amhara, and Somali are more at risk to get circumcised compared to girls in Addis Ababa. In all other regions, there are no statistically significant effects to conclude that girls are more at risk to FGM compared to their peers in the capital.

It is important to note that there are no significant associations between gender of the household head, area of residence (urban/rural), household wealth, and exposure to media, and FGM. As per above, these may reflect a mismatch between current status of the information collected for mentioned indicators and FGM practice that may have occurred in the past. The readers are therefore advised to keep these limitations of measurement in mind when reading the results of this regression model.

# Recommendations

The findings of this study show trends in gender equality and women's empowerment and how different domains of women's empowerment are associated with children's wellbeing. Overall, gender equality and women's empowerment saw improvements in Ethiopia between 2000 and 2016, but a myriad of issues persist. Based on the study, three sets of recommendations are proposed in order to design policy and programme interventions to enhance gender equality and women's empowerment and, ultimately, children's wellbeing, and to improve the quality of measurement and monitoring for future evaluations.

**Policy and programme interventions.** The findings across different indicators and domains of wellbeing and empowerment consistently show that there are clusters of population that lag behind in the fulfilment of their basic needs and rights.

**Gender equality**

- Higher vulnerabilities are observed in rural as compared to urban areas across many indicators, age groups, and years. Tackling vulnerabilities in rural areas, especially *anaemia, immunization, health-seeking behaviour, child marriage, ownership of assets,* will significantly enhance the situation of girls and women.

- The gender equality gap varies widely across regions. Progress in narrowing it has been steady in Addis Ababa, but slower progress or even regress has been observed in Afar, Tigray, Somali, SNNPR, Amhara, Harari, Dire Dawa, Gambela, Benishangul-Gumuz. Some key areas where high gender inequality was observed are:

    - Anaemia levels for adolescent girls and women in Afar and Somali

    - Gender gap in school attendance in Afar, Harari and Somali

    - High gender inequality in adult literacy in Gambela and in adolescent literacy for Somali

    - High incidence of child marriage, teenage pregnancy and FGM in Somali and Afar

    - Wide justification of wife-beating among men in Amhara and women in Oromia, Afar, Tigray and SNNPR

    - Lower incidence of women's participation in household decision-making in Somali, SNNPR and Afar.

- A regional focus in tackling gender inequality is recommended.

- Incidence of violence – physical, psychological or sexual – is higher in urban areas and in Addis Ababa, Amhara and Harari. Awareness-raising campaigns are encouraged for these areas, in addition to the establishment of legal and other institutional mechanisms to respond to gender-based violence cases in an integrated manner.

- Household wealth is associated with gender equality across most indicators of wellbeing. Specifically, gender inequality is wider in the poorest wealth quintiles and progress among these population groups has been slower over time. These findings suggest that interventions designed to redistribute wealth will have a positive impact on the enhancement of gender equality.

- With the exception of stunting among children under 5, underweight among adolescents and adults, and a few other indicators, including education among children, the results show that girls and women are less likely to realize their rights and fulfil their basic needs compared to their male counterparts. In addition, girls and women are affected by several gender-related vulnerabilities such as low coverage rates of antenatal care and skilled birth attendance, anaemia, experience of gender-based violence, female genital mutilation, early marriage, and teenage pregnancy. Addressing all of these issues is a precondition to enhancing gender equality across other indicators and domains of wellbeing.

**Women's empowerment**

- Women living in rural areas are less likely to be empowered across all domains compared to women in urban areas. Programmes aimed at empowering girls and women should therefore prioritize rural areas.

- There are persistent regional disparities in women's empowerment in Ethiopia. Women's empowerment in the education domain is exceptionally low in Somali, SNNPR, Afar, Oromia, and Benishangul-Gumuz. Empowerment in the economic domain is the lowest in Afar, Amhara, Benishangul-Gumuz, Oromia, and Somali. The rate of women empowered in the familial domain was the lowest in Afar. Afar, Oromia, and Tigray have the lowest rates of empowerment in attitudes towards wife-beating domain. Particular attention should be dedicated to the above-mentioned regions when tackling empowerment across its different domains especially in regions like Afar and Oromia where women are disadvantaged in several domains at the same time.

- Women's empowerment is positively associated with improving children's wellbeing across outcomes such as nutrition, health-related knowledge and education. Investing in women is therefore an effective complementary strategy for improving children's wellbeing.

- Household wealth, residence in urban areas, fewer children in the household, and father's attainment of higher education are some of the factors that are positively associated with children's wellbeing across different dimensions. Expansion of social protection measures targeting these households is recommended as one of the short- and medium-term interventions. Interventions to improve educational outcomes are crucial, with multiple long-term effects. Although it may be difficult to change the level of education of current mothers and fathers, by educating today's children, the next generation will benefit from more educated parents.

**Improving the measurement of indicators and data collection for future monitoring and evaluation.**

Assessing trends in gender equality, women's empowerment, and association of the latter with children's wellbeing revealed a myriad of challenges in terms of data availability, quality and consistency. Amendments and improvements of data collection tools are therefore necessary for future evaluation and monitoring.

- The multidimensional aspects of women's empowerment and child wellbeing are well known but there is limited empirical data to measure them comprehensibly. To ensure proper monitoring of progress, provisions to support data collection are essential. In so doing, it is necessary to enrich existing measurements and add additional ones to enable collection of data on important issues of women's empowerment such as protection (physical and emotional)[44], mobility[45], violence[46], and social and family norms[47] that define and affect empowerment. In addition, the data need to account for the complexity of children's outcomes such as early child development, psychological health, perceptions and attitudes to development to better account for the multidimensional wellbeing of children. To the extent possible, child self-reports on outcomes and women's perceptions of empowerment would contribute much to better contextualizing and measuring wellbeing among the two groups. Furthermore, contextualized indicators are needed to capture differences in the needs and risks of women and children residing in different regions and in urban and rural locations.

44 Additional data on protection could include, for example, factors relating to the environment in which the woman lives in (how safe it is to go outside during the day and night), whether she is harassed by outsiders, the extent to which she knows about her rights, etc

45 Additional data on mobility could include factors that restrict some of her movements, the reasons for her inability to go to places where she wants to go, etc

46 Data on domestic violence should be collected for women in the whole sample rather than a sub-sample as is the case in the existing survey.

47 There are inherent social and family norms that determine the status of a woman in a society. It is important to understand the norms that make the woman feel inferior in the household or in the community. Data on social norms and values are better captured via qualitative data.

- The EDHS data can only be disaggregated at regional level (9 regional states and 2 chartered cities). It is recommended that the disaggregation should include subregions in order to understand disparities within them.

- The EDHS focuses most on the nutritional status of children under 5 and individuals aged 15 years and above, implying that no information is collected for children aged 5-14 years. It is recommended to collect anthropometric data for children aged 5-14 years and data on food frequency and diversity for children older than 23 months. The indicator of food security – albeit measured at household level – is an important nutritional indicator, also shedding light on external shocks and availability of food.

- The EDHS captures a limited number of health indicators for population groups older than 5 years. For monitoring purposes, it is important to gain an insight on accessibility to both preventive and curative care, and availability, affordability, and quality of healthcare services at all levels, for all age groups.

- Information about child protection (including teenage pregnancy, child marriage, age at first sexual intercourse, and child labour) is asked only for children aged 15-17 years. These vulnerabilities also occur among children of a younger age, but are not captured by current data. This hinders our understanding of the scale and occurrence of these vulnerabilities among the entire child population. Also, given that data on these indicators are collected for a small segment of the child population, there are not enough observations and variances to conduct a regression analysis linking women's empowerment to child protection. Therefore, it is recommended that data on child protection should also be collected for children of a younger age with due ethical considerations (data on teenage pregnancy, child marriage and age at first sexual intercourse should be collected from the age of 12 years while data on child labour should be collected from the age of 5 years).

- Data on GBV is collected only for a sub-sample of women in the EDHS and there are many missing observations in this sub-sample. Therefore, GBV could not be used in constructing the WEI. It is recommended to sample the entire population of women in the EDHS for this module. Further, given that data on GBV are often sensitive to collect, conducting a standalone survey with interviewers trained by specialists is recommended. Extending the collection of this data for children younger than 15 years is also recommended, with due consideration given to ethical standards.

- The measurement of domestic violence relates to women and excludes men. It is recommended that the EDHS module on domestic violence should include measurement of violence against boys and men to better capture variations in this phenomenon across gender lines.

- The quality of education is not adequately measured in the EDHS, as literacy captures only one aspect of it. It is recommended that a module on school facilities should be added to the EDHS, including questions about the school infrastructure and facilities, WASH in schools, teacher absenteeism, as well as facilities for management of menstrual hygiene.

- EDHS data are cross-sectional and not ideal for capturing changes that occur over time. In other words, EDHS cross-sectional samples offer insights into the generic changes in the patterns of gender equality and empowerment over time and not into the persistence of these dimensions among individuals. This limits the design and applicability of programmes that may target those who are most vulnerable to gender inequality and empowerment in the country. There is a need for panel data in which individuals are followed over time so that dynamic changes in equality and empowerment indicators can be observed and monitored.

**Areas of further research**

The quantitative focus of this study was useful to gain an insight into the scale of gender inequality and incidence of women's empowerment in Ethiopia. Further research is necessary to carry out in-depth analytical work to better understand the underlying causes behind these findings. Additional qualitative data would contribute much to exploring further the how and why of the following findings.

- Higher prevalence of poor nutritional outcomes amongst boys and men compared to girls and women;
- The low coverage of maternal services, including antenatal care and skilled birth attendance, and child healthcare services such as immunization;
- Lower incidence of knowledge about HIV/AIDS prevention and transmission and MTCT knowledge amongst adolescent girls and adult women compared to adolescent boys and adult men;
- The high incidence of unmet needs for family planning in rural areas;
- The high incidence of FGM in some regions such as Somali and Afar, and the factors associated with it;
- Higher incidence of violence – physical, psychological or sexual – towards adolescent girls in urban areas and Addis Ababa, Amhara and Harari;
- High prevalence of justification of wife-beating among men in Amhara, and women in Oromia, Afar, Tigray, and SNNPR;
- Low incidence of women's participation in decision-making in Somali, SNNPR, and Afar;
- Reasons which hinder women's empowerment in the education, economic familial/interpersonal and justification of wife-beating domains, especially in the latter domain where research is limited;
- Low incidence of women's empowerment in Somali, Benishangul-Gumuz, and SNNPR;
- Association between household wealth and both gender equality and women's empowerment;
- Factors associated with FGM prevalence, including women's empowerment;
- Unravelling gender norms and cultures rooted in Ethiopian society which define the woman's status and her level of empowerment;
- Understanding the channels through which children's wellbeing is affected by women's empowerment.

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# Annex 1 Definition of parameters used in trend analysis of sex equality

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| **Nutrition** | **CONSTITUTION OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (FDRE) (1995)**<br>**Article 36. Rights of Children. 1.** Every child has the right to<br>**(a)** Life.<br>**Article 90, Social Objectives.** 1. To the extent the country's resources permit, policies shall aim to provide all Ethiopians access to public health and education, clean water, housing, food, and social security.<br><br>**CONVENTION ON THE RIGHTS OF THE CHILD (1989)**<br>**Article 24, 1**. States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.<br>**2.** States Parties shall pursue full implementation of this right, and in particular, shall take appropriate measures:<br>**(c)** To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution.<br><br>**CONVENTION ON THE ELIIMINATION OF ALL FORMS OF DESCRIMINATION AGAINST WOMEN (1979)**<br>**Article 12, 2**. Notwithstanding the provisions of paragraph I in this article, State Parties shall ensure to women appropriate services in connection with pregnancy, confinement and post-natal period, granting free services where necessary, as well as adequate nutrition during pregnancy and lactation.<br><br>**SDG2. END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTINABLE AGRICULTURE**<br>**2.2**. By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons. | Exclusive breastfeeding | Child is fed only breast milk | 0-5 months | |
| | | Early initiation of breastfeeding | Child was put to breast within one hour of birth | 0-23 months | |
| | | Minimum acceptable diet | Child receives minimum *dietary diversity*: foods from 4 or more food groups out of 7 in total: i)grains, roots and tubers; ii) legumes and nuts; iii) dairy products (milk, yoghurt, cheese), iv) flesh foods (meat, fish, poultry, and liver/organ meats), v) eggs, vi) vitamin A-rich fruits and vegetables, and vii) other fruits and vegetables, and *minimum meal frequency:* 2 times for breastfed infants aged 6-8 months, 3 times for breastfed children aged 9-12 months, 4 times for non-breastfed children aged 6-23 months. | 6-23 months | |
| | | Stunting | Height-for-age of child is -2SD below the median of the reference population/Child is too short for his/her age | Under 5 | EDHS 2005 excluded from the analysis; missing data on more than 50% of observations. |
| | | Wasting | Weight-for-height of child under 5 is -2SD below the median of the reference population/Child is too thin for his/her height | Under 5 | EDHS 2005 excluded from the analysis; missing data on more than 50% of observations. |
| | | Underweight | Weight-for-age of child under 5 is -2SD below the median of the reference population/Child is too thin for his/her age | Under 5 | EDHS 2005 excluded from the analysis; missing data on more than 50% of observations. |
| | | Overweight | Weight-for-age of child under 5 is +2SD above the reference population/ Child is too heavy for his/her age | Under 5 | EDHS 2005 excluded from the analysis; missing data on more than 50% of observations. |
| | | BMI | Woman's/man's BMI (weight-for-height squared) <18.5 | Adolescents: 15-19 years<br>Adult women: 20-49 years;<br>Adult men: 20-59 years | Data not available for adolescent boys and adult men in EDHS 2005 and EDHS 2000. |
| | | Short stature | Height of woman <145cm | 15-49 years | |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | | Iron deficiency | Child experiences some form of anaemia (mild, moderate or severe)/Haemoglobin level < 11 grams/decilitre<br><br>Woman experiences some form of anaemia (mild, moderate or severe) / / Haemoglobin level < 11 grams/ decilitre<br><br>Man experiences some form of anaemia (mild, moderate or severe) /Haemoglobin level < 13 grams/decilitre | Children: 6-59 months<br><br>Women: 15-49 years<br><br>Men: 15-59 years | |
| **Health and health-related knowledge** | **CONSTITUTION OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (FDRE) (1995)**<br>**Article 36. Rights of Children. 1**. Every child has the right to<br>(a) Life.<br>**Article 41. Economic, Social and Cultural Rights. 4.** The State has the obligation to allocate an ever increasing resources to provide to the public health, education, and social services.<br>**Article 90, Social Objectives,** (1). To the extent the country's resources permit, policies shall aim to provide all Ethiopians access to public health and education, clean water, housing, food, and social security.<br><br>**CONVENTION ON THE RIGHTS OF THE CHILD (1989)**<br>**Article 24, 1**. States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.<br>**2.** States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures:<br>**(a)** To diminish infant and child mortality;<br>**(b)** To ensure the provision of necessary medical assistance and healthcare to all children with emphasis on the development of primary health care; | Immunization | Child is fully immunized as per the national immunization schedule.<br><br>Children ages 11-59 months are considered to be fully vaccinated if they have completed all of the following vaccines: BCG, 3 doses of DPT-HepBHib (pentavalent), 3 doses of Polio, and Measles.<br><br>Children younger than 11 months are considered to be fully vaccinated if they completed vaccination that corresponds with their age in the Ethiopian National Vaccination Schedule: BCG - age of 1 month; DPT-HepB-Hib, dose 1 – age 3 months; DPT-HepB-Hib, dose 2 – age 4 months; DPT-HepB-Hib, dose 3 – age 5 months; Polio1 – age 3 months, | 1 month – under 5 years | In EDHS 2016 data for children aged 3-4 years imputed from younger siblings. |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | **(c)** To combat disease and malnutrition, including within the framework of primary healthcare, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking water, taking into consideration the dangers and risks of environmental pollution;<br>**(d)** To ensure appropriate pre-natal and post-natal health care for mothers;<br>**(e)** To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene, and environmental sanitation, and the prevention of accidents.<br><br>**CONVENTION ON THE ELIMINATION OF ALL FORMS OF DESCRIMINATION AGAINST WOMEN (1979)**<br>**Article 12, 1.** State Parties shall take all appropriate measures to eliminate discrimination against women in the field of health care in order to ensure, on a basis of equality of men and women, access to health care services, including those related to family planning.<br>2. Notwithstanding the provisions of paragraph I in this article, State Parties shall ensure to women appropriate services in connection with pregnancy, confinement and post-natal period, granting free services where necessary, as well as adequate nutrition during pregnancy and lactation<br><br>**Article 14, 2**. State Parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and benefit from rural development and, in particular, shall ensure to such women the right:<br>**(b)** To have access to adequate health care facilities, including information, counselling and services in family planning.<br><br>**SDG3. ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AGES**<br>**3.1.** By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births<br>**3.2.** By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births<br>**3.3.** By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases | | Polio2- age 4 months, Polio3- age 5 months; Measles-10 months. The threshold for immunization in each of these vaccines is set at one month higher than the national schedule taking into account that the child must be healthy to be vaccinated | | |
| | | Healthcare seeking for most prevalent illnesses | Child who had diarrhoea, cough or fever during the 2 weeks preceding the survey was treated in the public, private or NGO healthcare sector. Excludes advice or treatment sought from pharmacies, shops, drug vendors, market, and traditional health practitioners. | Under 5 | |
| | | Access to adequate ANC services | Woman had 4+ ANC visits during the last pregnancy provided by a skilled health professional | 15-49 years | EDHS2016, skilled birth attendants: doctor, nurse, midwife, health officer, and Health Extension Worker.<br><br>EDHS2011, skilled birth attendants: doctor, nurse, and midwife.<br><br>EDHS 2005, skilled birth attendants: health professional.<br><br>EDHS 2000, skilled birth attendants: health professional. |
| | | Skilled birth attendance | Woman was assisted by a skilled birth attendant in her last child birth: doctor, nurse, midwife, Health Extension Worker (HEW) | 15-49 years | EDHS 2016, skilled health professional: skilled birth attendants: doctor, nurse, midwife, health officer, and Health Extension Worker.<br><br>EDHS2011, skilled health professional: doctor, nurse, and midwife.<br><br>EDHS 2005, skilled health professional: health professional.<br><br>EDHS 2000, skilled birth professional: health professional. |
| | | Comprehensive knowledge about HIV/AIDS prevention | (1) Woman/man has not heard about HIV/AIDS; (2) | Adolescents: 15-19 years | EDHS 2000 does not cover related questions on misconceptions about HIV |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | **3.8**. Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all | and transmission | Woman/man does not know that having only one sex partner who has no other partners or always using condoms during sex can reduce the risk of getting HIV; (3) Woman/man thinks that or does not know whether HIV can be transmitted through mosquito bites, sharing food with a person who has AIDS; (4) Woman/man thinks that does not know whether a healthy looking person can have HIV | Adult women: 20-49 years<br><br>Adult men: 20-59 years | |
| | | Knowledge about mother-to-child transmission of HIV | Woman/man knows that HIV can be transmitted from mother to child during pregnancy, childbirth, and breastfeeding | Adolescents: 15-19 years<br><br>Adult women: 20-49 years<br><br>Adult men: 20-59 years | EDHS 2000 does not contain question about MTCT knowledge |
| | | HIV testing | Woman/man has been tested for HIV | For 2005, 2011, 2016: 15-49/59 years<br><br>For 2016 only: Adolescents: 15-19 years<br><br>Adult women: 20-49 years<br><br>Adult men: 20-59 years | EDHS 2000 does not contain a question on HIV testing.<br><br>For 2005 and 2011, figures could not be disaggregated by age sub-groups due to the small sizes of the sub-sample. |
| | | HIV prevalence | Woman/man is HIV positive | Adolescents: 15-19 years<br><br>Women: 15-49 years<br><br>Men: 15-59 years | EDHS 2000 did not contain a biomarker questionnaire with HIV testing. |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| **Family planning** | **CONSTITUTION OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (FDRE) (1995)**<br>**Article 35 Rights of Women, 9.** To prevent harm arising from pregnancy and childbirth and in order to safeguard their health, women have the right of access to family planning education, information, and capacity.<br><br>**CONVENTION ON THE RIGHTS OF THE CHILD (1989)**<br>**Article 24, 2.** States Parties shall pursue full implementation of this right, and in particular, shall take appropriate measures:<br>**(f)** To develop preventive health care, guidance for parents and family planning education and services.<br><br>**CONVENTION ON THE ELIIMINATION OF ALL FORMS OF DESCRIMINATION AGAINST WOMEN (1979)**<br>Article 10. States Parties shall take appropriate measures to eliminate discrimination against women in order to ensure to them equal rights with men in the field of education and in particular to ensure, on a basis of equality of women and men:<br>**(h)** Access to specific educational information to help ensure that health and well-being of families, including information and advice on family planning.<br><br>**Article 16, 1.** States Parties shall take all appropriate measures to eliminate discrimination against women in all matters relating to marriage and family relations and in particular shall ensure, on a basis of equality of men and women:<br>**(e)** The same rights to decide freely and responsibly on the number and spacing of their children and to have access to the information, education, and means to enable them to exercise these rights;<br><br>**SDG3. ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES**<br><br>**3.7. By 2030,** ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.<br><br>**SDG5. ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS** | Knowledge of modern contraception | Woman/man knows at least one modern contraception method | Adolescents: 15-19 years<br><br>Adult women: 20-49 years<br><br>Adult men: 20-59 years | |
| | | Unmet need for family planning | (1) Woman is not pregnant and not postpartum amenorrhoeic and considered fecund and wants to postpone next birth for 2+ years or stop childbearing altogether but not using a contraceptive method, or (2) has a mistimed or unwanted current pregnancy, or (3) is postpartum amenorrhoeic and her last birth in the last 2 years was mistimed or unwanted. | 15-49 years | |
| | | Exposure to family planning information | Girl/woman or boy/man has seen/heard/read information on family planning during the last few months from at least one of the following sources: (1) radio, (2) TV, (3) newspaper/ magazine, (4) mobile phone text messages, (5) pamphlets/ posters/leaflets, (6) community planning events/conversations, or (7) | Adolescents: 15-49 years<br><br>Adult women: 20-49 years<br><br>Adult men: 20-59 years | EDHS 2000, EDHS 2005, and EDHS 2011 definition excludes (4) mobile phone text messages and (7) Internet |
| | **5.6.** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences. | | | | |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | **CONSTITUTION OF THE FDRE (1995)**<br>**Article 41. Economic, Social and Cultural Rights. 4.** The State has the obligation to allocate ever-increasing resources to provide to the public health, education, and social services.<br>**Article 90, Social Objectives.**<br>**1.** To the extent the country's resources permit, policies shall aim to provide all Ethiopians access to public health and education, clean water, housing, food, and social security.<br>**2.** Education should be provided in a manner that is free from any religious influence, political partisanship or cultural prejudices.<br><br>**CONVENTION ON THE RIGHTS OF THE CHILD (1989)**<br>Article 28, 1. States Parties recognize the right of the child to education, and with a view to achieving this right progressively and on the basis of equal opportunity, they shall, in particular:<br>**(a)** Make primary education compulsory and available free to all;<br>**(b)** Encourage the development of different forms of secondary education, including general and vocational education, make them available and accessible to every child, and take appropriate measures such as the introduction of free education and offering financial assistance in case of need;<br>**(c)** Make higher education accessible to all on the basis of capacity by every appropriate means;<br>(d) Make educational and vocational information and guidance available and accessible to all children;<br>**(e)** Take measures to encourage regular attendance at schools and the reduction of drop-out rates.<br>**3.** States Parties shall promote and encourage international cooperation in matters relating to education, in particular with a view to contributing to the elimination of ignorance and illiteracy throughout the world and facilitating access to scientific and technical knowledge and modern teaching methods. In this regard, particular account shall be taken of the needs of developing countries. | School attendance | Child is attending preschool, primary school, or secondary school | Preschool: 5-6 years<br><br>Primary school: 7-9 years<br><br>Primary school young adolescents: 10-14 years<br><br>Secondary school adolescents: 15-17 years | |
| | | Delay in schooling | Primary school-age child is attending the right grade for his/her age (vs. children attending with 2+ years of delay)<br><br>Secondary school-age child is attending the right grade for his/her age (vs. children attending with 3+ years of delay) | 10-14 years<br><br>15-17 years | |
| | | Educational attainment | For adolescents, mean of the highest grade completed<br><br>For adults, highest educational level attained: no education, primary secondary, higher | Adolescents: 15-19 years<br><br>Adults women: 20-49 years<br><br>Adult men: 20-59 years | |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | **CONVENTION ON THE ELIMINATION OF ALL FORMS OF DISCRIMINATION AGAINST WOMEN (1979)**<br>**Article 10,** States Parties shall take all appropriate measures to eliminate discrimination against women in order to ensure to them equal rights with men in the field of education and in particular to ensure, on a basis of equality of men and women:<br>**(a)** The same conditions for career and vocational guidance, for access to studies and for the achievement of diplomas in educational establishments of all categories in rural as well as in urban areas; this equality shall be ensured in pre-school, general, technical, professional and higher technical education, as well as in all types of vocational training;<br>**(e)** The same opportunities for access to programmes of continuing education, including adult and functional literacy programmes, particularly those aimed at reducing, at the earliest possible time, any gap in education existing between men and women;<br>**(f)** The reduction of female student drop-out rates and the organization of programmes for girls and women who have left school prematurely.<br><br>**Article 14, 2.** State Parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and benefit from rural development and, in particular, shall ensure to such women the right:<br>**(d)** To obtain all types of training and education, formal and non-formal, including that relating to functional literacy, as well as, inter alia, the benefit of all community and extension services, in order to increase their technical proficiency.<br><br>**SDG 4. ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL**<br>**4.1. By 2030**, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.<br>**4.2.** By 2030, ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education<br>4.3. By 2030, ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university<br>**4.4. By 2030,** substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship<br>**4.5.** By 2030, eliminate sex disparities in education and ensure equal | Literacy | Girl/boy/woman/man could not read the sentence or could read only parts of a sentence during the survey | Adolescents: 15-19 years<br><br>Adults women: 20-49 years<br><br>Adult men: 20-59 years | |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations<br>**4.6.** By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy | | | | |
| **Child protection**<br><br>**and**<br><br>**Elimination of all forms of discrimination against women** | **CONSTITUTION OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (1995)**<br>**Article 36 Rights of children, 1.** Every child has the right:<br>**e.** To know and be cared for by his or her parents or legal guardians;<br>**d.** Not to be subject to exploitative practices, neither to be required nor permitted to perform work which may be hazardous or harmful to his or her education, health or wellbeing;<br>**e.** To be free of corporal punishment or cruel and inhumane treatment in schools and other institutions responsible for the care of children.<br>**Article 34 Marital, Personal and Family Rights, 2.** Marriage shall be entered into only with the free will and full consent of the intending spouses.<br>**Article 35 Rights of women, 4.** The State shall enforce the right of women to eliminate the influences of harmful customs. Laws, customs and practices that oppress or cause bodily or mental harm to women are prohibited<br><br>**PROCLAMATION NO.760/2012 ON THE REGISTRATION OF VITAL EVENTS AND NATIONAL IDENTITY CARD**<br>**17. Principle, 1** Any vital event shall be registered with necessary detail information that can be used for legal, administrative, and statistical purposes<br>**26. Obligation to declare birth, 1.** The birth of a child shall be declared by the father or mother of the child, in their default, by the guardian of the child, or in default of guardian, by the person who has taken care of the child.<br><br>**CONVENTION ON THE RIGHTS OF THE CHILD (1989)**<br>**Article 7, 1.** The child shall be registered immediately after birth and shall have the right from birth to a name, the right to acquire a nationality and. as far as possible, the right to know and be cared for by his or her parents.<br>**Article 19, 1.** States Parties shall take all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect | Birth registration | Child has a birth certificate or his/her birth was registered | 1-4 years | Indicator not available in EDHS2011 and EDHS2000. |
| | | Child marriage | Adolescent girl is currently married, divorced or widowed, or was married, divorced, widowed | 15-17 years | |
| | | Age at first sexual intercourse | Woman was under 18 when she had her first sexual intercourse | | |
| | | Teenage pregnancy | Girl/young woman is pregnant or already had a birth | 15-19 years | |
| | | Incidence of FGM/C | Girl/woman is circumcised | 15-49 years | Indicator not available in EDHS2011. |
| | | Attitudes toward FGM/C | Girl/woman thinks that FGM/C should be continued, does not know whether it should be continued, or thinks that it should be continued depending on the circumstances | Adolescents: 15-19 years<br><br>Adult women: 15-49 years<br><br>Adult men: 15-59 years | Indicator not available in EDHS 2011, and for men and adolescent boys available only in EDHS2016. |
| | | Incidence of GBV | Girl/woman experienced any type of domestic violence: psychological, physical or sexual | Adolescent girls: 15-19 years<br><br>Adult women: 15-49 years | |
| | | Attitudes toward wife-beating | Woman/man thinks that/ doesn't know whether wife beating is justified in any of the five occasions: (1) if wife goes out without telling husband; (2) if wife neglects the children; (3) if wife argues with husband; (4) if wife refuses to have sex with husband; (5) if wife burns the food | Women: 15-49 years<br><br>Men: 15-59 years | |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| **Agency and autonomy** | or negligent treatment, maltreatment or exploitation, including sexual abuse, while in the care of parent(s), legal guardian(s) or any other person who has the care of the child.<br>**Article 24, 3.** States Parties shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children.<br><br>CONVENTION ON THE ELIMINATION OF ALL FORMS OF DISCRIMINATION AGAINST WOMEN (1979)<br><br>**Article 16, 1.** States Parties shall take all appropriate measures to eliminate discrimination against women in all matters relating to marriage and family relations and in particular shall ensure, on a basis of equality of women and men:<br>**(a)** The same right to enter into marriage;<br>**(b)** The same right to freely choose a spouse and to enter into marriage only with their free will and full consent.<br>**DECLARATION ON THE ELIMINATION OF VIOLENCE AGAINST WOMEN (1993)**<br>**Article 3**. Women are entitled to the equal enjoyment and protection of all human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field. These rights include, inter alia: **(a)** The right to life; **(b)** The right to equality; **(c)** The right to liberty and security of person; **(d)** The right to equal protection under law; **(e)** The right to be free from all forms of discrimination; **(f)** The right to the highest standard attainable of physical and mental health; **(g)** The right to just and favourable conditions of work; **(h)** The right not to be subjected to torture, or other cruel, inhuman or degrading treatment or punishment.<br><br>**SDG 5. ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS**<br>**5.2.** Eliminate all forms of violence against women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.<br>**5.3.** Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation | Decision about own health | Participation in decision – alone or jointly with partner - about own health | Women: 15-49 years | |
| | | Decision about large household purchases | Participation in decision – alone or jointly with partner - about major household purchases | Women: 15-49 years | |
| | | Decision about visiting family or relatives | Participation in decision – alone or jointly with partner - about visiting family or relatives | Women: 15-49 years | |
| | | Decision-making power over husband's/partner's earnings | Participation in on how husband's/partner's earnings will be spent | Women: 15-49 years | |
| | | Decision about use of contraceptives | Participation in decision – alone or jointly – to use contraceptives | Women: 15-49 years | |
| | | Control over sexual relations | Ability to refuse sex | Women: 15-49 years | |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| **Resources** | CONSTITUTION OF THE FDRE (1995)<br>**ARTICLE 35 RIGHTS OF WOMEN.**<br>**7.** Women have the right to acquire, administer, control, use and transfer property. In particular, they have equal rights with men with respect to use, transfer, administration and control of land. They shall also enjoy equal treatment in the inheritance of property.<br>**8.** Women have the right to equality in employment, promotion, pay, and the transfer of pension entitlements.<br><br>**CONVENTION ON THE ELIMINATION OF ALL FORMS OF DESCRIMINATION AGAINST WOMEN (1979)**<br>**Article 11,1.** States Parties shall take all appropriate measures to eliminate discrimination against women in the field of employment in order to ensure, on a basis of equality of men and women, the same rights, in particular:<br>**(a)** The right to work as an inalienable right of all human beings;<br>**(c)** The right to free choice of profession and employment, the right to promotion, job security and all benefits and conditions of service and the right to receive vocational training and retraining, including apprenticeships, advanced vocational training and recurring training.<br><br>**Article 14, 1.** States Parties shall take into account the particular problems faced by rural women and the significant roles which rural women play in the economic survival of their families, including work in the non-monetized sectors of the economy, and shall take all appropriate measures to ensure the application of the provisions of the present Convention to women in rural areas.<br><br>**Article 16, 1.** States Parties shall take all appropriate measures to eliminate discrimination against women in all matters relating to marriage and family relations and in particular shall ensure, on a basis of equality of men and women:<br>**(g)** The same rights as husband and wife, including the right to choose a family name, a profession and an occupation;<br>**(h)** The same rights for both spouses in respect of the ownership, acquisition, management, administration, enjoyment and disposition of property, whether free of charge or for a valuable consideration. | Labour market statistics:<br>• Employment rate<br>• Unemployment rate<br>• Labour force participation<br>• Sectors of employment<br>• Vulnerable employment<br>• Type of remuneration | | Youth: 15-24 years<br><br>Working age: 15+ years | Due to data limitations and consistency issues across the EDHS waves, used another source: World Bank, ASPIRE database. |
| | Time use | Person most commonly responsible for fetching the water | Adult woman<br>Adult man<br>Female child under 15<br>Male child under 15 | Indicator not available in EDHS2000. |
| | | Woman's husband/partner helps almost daily with household chores like looking after children, cooking, cleaning the house and doing other work around the house | Married women | Indicator not available in EDHS2005 and EDHS2000 |
| | House and land ownership; control over real estate | Woman/man owns a house alone and/or jointly<br><br>Woman/man owns land alone and/or jointly<br><br>Woman/man has a title deed on the owned house and her/his name is on the title deed<br><br>Woman/man has a title deed on the owned land and her/his name is on the title deed | Women: 15-49 years<br><br>Men:15-59 years | Indicators on title deed of house and land available only on EDHS 2016.<br><br>Data on ownership of land and house not available in EDHS 2005 and EDHS 2000. |

| Domain | Legal/policy framework | Indicator | Definition | Age group | Notes about availability/differences across EDHS waves |
|---|---|---|---|---|---|
| | **SDG5. ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS**<br>5.4. Recognize and value unpaid care and domestic work through the provision of public services, infrastructure, and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.<br><br>5a. Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.<br><br>5b. Enhance the use of enabling technology, in particular information and communication technology, to promote the empowerment of women | Ownership and usage of bank accounts | Woman owns and uses a bank account | 15-49 years | |
| | | Ownership and usage of mobile phones | Woman owns and uses a mobile phone | 15-49 years | |
| | | Exposure to media | Woman has exposure to at least one media source – newspaper, radio, television, internet – at least once per week | 15-49 years | Internet available only in EDHS2016. |

## Annex 2 Trends in exclusive breastfeeding, by sex, area, and region of residence

| Children under 6 months fed only breast milk | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 50.4% | 48.9% | 52.2% | 56.8% | -7.62*** |
| Sex | Girls | 53.1% | 48.2% | 55.1% | 57.6% | |
| | Boys | 48.0% | 49.4% | 49.6% | 55.9% | |
| | Significance of sex differences (two-tailed test) t value | 0.36 | 0.42 | 0.29 | 0.49 | |
| Area of residence | Urban | 43.0% | 40.3% | 49.3% | 58.5% | -7.29*** |
| | Rural | 51.3% | 49.5% | 52.6% | 56.6% | -5.34*** |
| Region | Addis Ababa | 4.8% | 25.8% | 35.7% | 58.1% | -7.16*** |
| | Afar | 19.6% | 5.7% | 18.0% | 54.0% | -3.45*** |
| | Amhara | 67.6% | 71.4% | 79.0% | 63.4% | 0.74 |
| | Benishangul-Gumuz | 48.3% | 42.1% | 42.3% | 66.7% | -3.09** |
| | Dire Dawa | 12.3% | 16.6% | 41.3% | 66.0% | -6.66*** |
| | Gambela | 19.1% | 37.6% | 31.0% | 50.5% | -3.01** |
| | Harari | 12.6% | 33.0% | 42.6% | 41.8% | -3.62*** |
| | Oromia | 51.3% | 45.0% | 45.5% | 54.0% | -0.52 |
| | SNNPR | 37.6% | 43.8% | 51.3% | 55.8% | -3.18** |
| | Somali | 5.5% | 16.1% | 19.5% | 38.4% | -4.46*** |
| | Tigray | 54.5% | 34.3% | 58.1% | 71.8% | -2.478* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data..

## Annex 3 Trends in exclusive breastfeeding, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 36% | 54% | 54% | -4.04*** |
| Poorer | 54% | 49% | 63% | -2.80** |
| Middle | 59% | 57% | 54% | -0.88 |
| Richer | 49% | 54% | 46% | -0.66 |
| Richest | 42% | 44% | 67% | -6.01*** |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

## Annex 4 Trends in early initiation of breastfeeding, by sex, area and region of residence

| Children under 2 years put to breast within the hour of birth | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 48.8% | 66.4% | 51.8% | 72.4% | -19.27*** |
| Sex | Girls | 48.3% | 66.9% | 53.6% | 73.5% | |
| | Boys | 49.3% | 66.1% | 50.2% | 71.2% | |
| | Significance of sex differences (two-tailed test) t value | -0.03 | -0.39 | 1.99* | 1.77 | |
| Area of residence | Urban | 44.7% | 60.1% | 57.8% | 73.8% | -9.92*** |
| | Rural | 49.3% | 66.9% | 51.0% | 72.2% | -16.48*** |
| Region | Addis Ababa | 50.6% | 59.3% | 62.8% | 68.6% | -3.16** |
| | Afar | 31.7% | 81.3% | 58.0% | 42.1% | -2.19* |
| | Amhara | 29.6% | 60.0% | 38.5% | 64.8% | -10.77*** |
| | Benishangul-Gumuz | 49.1% | 68.4% | 41.6% | 71.0% | -5.05*** |
| | Dire Dawa | 47.3% | 88.2% | 65.7% | 89.8% | -10.38*** |
| | Gambela | 49.9% | 70.8% | 62.4% | 64.6% | -3.89*** |
| | Harari | 65.4% | 71.9% | 65.8% | 85.0% | -4.84*** |
| | Oromia | 60.3% | 68.3% | 51.9% | 76.1% | -5.81*** |
| | SNNPR | 55.8% | 69.7% | 67.3% | 75.9% | -7.17*** |
| | Somali | 51.2% | 86.0% | 38.8% | 74.8% | -3.82*** |
| | Tigray | 27.8% | 53.1% | 46.4% | 62.7% | -9.68*** |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

## Annex 5 Trends in early initiation of breastfeeding, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 69% | 48% | 73% | 4.52*** |
| Poorer | 68% | 51% | 74% | -0.60 |
| Middle | 68% | 51% | 72% | -2.07* |
| Richer | 64% | 52% | 68% | -1.51 |
| Richest | 62% | 59% | 76% | -4.64*** |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

## Annex 6 Trends in MAD, by sex, area and region of residence

| Children receiving a Minimum Acceptable Diet (MAD) (6-23 months) | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| National | Ethiopia | 5.2% | 4.1% | 7.4% | -2.02* |
| Sex | Girls | 4.7% | 4.7% | 7.0% | |
| | Boys | 5.7% | 3.6% | 7.9% | |
| | Significance of sex differences (two-tailed test) t value | -0.89 | 1.14 | -0.44 | |
| Area of residence | Urban | 15.5% | 9.8% | 20.3% | 0.38 |
| | Rural | 4.4% | 3.2% | 5.7% | -1.50 |
| Region | Addis Ababa | 16.5% | 7.0% | 30.6% | -0.67 |
| | Afar | 5.4% | 2.6% | 1.5% | 0.38 |
| | Amhara | 3.4% | 2.2% | 2.8% | -0.09 |
| | Benishangul-Gumuz | 5.2% | 3.7% | 16.4% | -2.40* |
| | Dire Dawa | 3.9% | 9.7% | 6.8% | -1.45 |
| | Gambela | 4.4% | 7.6% | 10.9% | -1.05 |
| | Harari | 13.2% | 4.9% | 9.7% | 0.36 |
| | Oromia | 6.0% | 5.4% | 9.0% | -0.40 |
| | SNNPR | 6.6% | 3.3% | 6.8% | 0.06 |
| | Somali | 0.0% | 1.9% | 2.9% | -1.50 |
| | Tigray | 1.4% | 4.2% | 5.6% | -1.28 |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

## Annex 7 Trends in MAD, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 2% | 1% | 3% | 0.18 |
| Second poorest | 5% | 4% | 7% | -0.58 |
| Middle | 3% | 3% | 8% | -2.31* |
| Second richest | 6% | 4% | 6% | -1.31 |
| Richest | 11% | 11% | 17% | -1.03 |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

## Annex 8 Trends in stunting, wasting, underweight, and overweight, by sex, area and region of residence

| Stunting, children under 5 | | 2000 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| National | Ethiopia | 49.7% | 43.1% | 37.9% | 14.72*** |
| Sex | Girls | 49.2% | 41.5% | 35.1% | |
| | Boys | 50.1% | 44.6% | 40.6% | |
| | Significance of sex differences (two-tailed test) t value | 0.60 | -2.58** | -2.84** | |
| Area of residence | Urban | 40.4% | 30.7% | 26.2% | 4.41*** |
| | Rural | 50.7% | 44.9% | 39.3% | 13.59*** |
| Region | Addis Ababa | 26.4% | 21.9% | 14.7% | 4.72*** |
| | Afar | 46.4% | 47.4% | 40.0% | 1.54 |
| | Amhara | 55.0% | 49.5% | 47.0% | 4.94*** |
| | Benishangul-Gumuz | 39.8% | 46.7% | 42.5% | -1.36 |
| | Dire Dawa | 30.6% | 34.4% | 39.8% | -2.02* |
| | Gambela | 34.9% | 27.6% | 23.1% | 4.44*** |
| | Harari | 35.8% | 29.0% | 31.6% | 1.47 |
| | Oromia | 46.2% | 40.6% | 35.7% | 6.08*** |
| | SNNPR | 51.7% | 42.7% | 38.4% | 8.12*** |
| | Somali | 41.8% | 31.2% | 26.5% | 7.21*** |
| | Tigray | 53.5% | 50.6% | 38.3% | 6.23*** |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

| Wasting, children under 5 | | 2000 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| National | Ethiopia | 10.4% | 9.5% | 9.9% | -1.35 |
| Sex | Girls | 9.7% | 8.1% | 9.7% | |
| | Boys | 11.2% | 10.9% | 10.1% | |
| | Significance of sex differences (two-tailed test) t value | -1.04 | -4.54*** | -3.22*** | |
| Area of residence | Urban | 5.9% | 5.5% | 9.1% | -2.34* |
| | Rural | 11.0% | 10.1% | 10.0% | -0.79 |
| Region | Addis Ababa | 4.0% | 4.7% | 3.7% | 0.85 |
| | Afar | 12.0% | 19.4% | 17.8% | -2.95** |
| | Amhara | 9.6% | 9.7% | 9.9% | -0.10 |
| | Benishangul-Gumuz | 14.0% | 9.4% | 10.7% | 2.55* |
| | Dire Dawa | 11.0% | 12.4% | 10.3% | 1.38 |
| | Gambela | 16.8% | 12.6% | 13.8% | 1.26 |
| | Harari | 5.9% | 9.0% | 10.8% | -2.91** |
| | Oromia | 10.2% | 9.5% | 10.4% | 0.37 |
| | SNNPR | 11.7% | 7.6% | 6.1% | 5.23*** |
| | Somali | 19.4% | 20.1% | 22.6% | -2.47* |
| | Tigray | 10.3% | 10.4% | 11.3% | -0.28 |
| | | 19.4% | | | |
| | | 10.3% | | | |

***p<0.001, **p<0.01, *p<0.05.
Source: Authors' calculations using EDHS data.

| Underweight, children under 5 | | 2000 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| National | Ethiopia | 45.7% | 27.9% | 23.8% | 26.4*** |
| Sex | Girls | 45.0% | 26.1% | 22.0% | |
| | Boys | 46.3% | 29.5% | 25.3% | |
| | Significance of sex differences (two-tailed test) t value | -0.98 | -3.85*** | -2.89*** | |
| Area of residence | Urban | 33.0% | 16.7% | 13.8% | 6.94*** |
| | Rural | 47.1% | 29.4% | 24.9% | 25.14*** |
| Region | Addis Ababa | 13.5% | 6.7% | 5.0% | 4.82*** |
| | Afar | 48.9% | 38.8% | 36.2% | 4.07*** |
| | Amhara | 49.9% | 32.6% | 29.1% | 11.23*** |
| | Benishangul-Gumuz | 41.3% | 31.5% | 34.5% | 3.42*** |
| | Dire Dawa | 30.4% | 26.9% | 27.1% | 2.65** |
| | Gambela | 36.9% | 21.0% | 18.1% | 7.13*** |
| | Harari | 25.6% | 20.7% | 20.1% | 2.22* |
| | Oromia | 41.9% | 25.0% | 22.6% | 12.44*** |
| | SNNPR | 50.7% | 27.4% | 21.8% | 17.30*** |
| | Somali | 40.4% | 31.5% | 27.8% | 5.98*** |
| | Tigray | 46.1% | 35.1% | 22.4% | 11.08*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Overweight, children under 5 | | 2000 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| National | Ethiopia | 4.5% | 4.3% | 4.4% | 3.43*** |
| Sex | Girls | 4.3% | 4.4% | 4.1% | |
| | Boys | 4.6% | 4.2% | 4.6% | |
| | Significance of sex differences (two-tailed test) t value | -0.98 | 0.14 | -1.73 | |
| Area of residence | Urban | 3.3% | 4.4% | 3.6% | -0.98 |
| | Rural | 4.6% | 4.3% | 4.5% | 4.25*** |
| Region | Addis Ababa | 5.9% | 7.7% | 7.4% | -1.28 |
| | Afar | 5.3% | 7.6% | 2.3% | 3.26** |
| | Amhara | 4.5% | 5.0% | 2.1% | 2.73** |
| | Benishangul-Gumuz | 6.0% | 4.2% | 2.9% | 3.80*** |
| | Dire Dawa | 2.5% | 4.6% | 2.9% | -0.98 |
| | Gambela | 5.5% | 2.5% | 3.2% | 0.69 |
| | Harari | 3.8% | 3.2% | 4.0% | -0.23 |
| | Oromia | 4.1% | 4.0% | 5.6% | -1.40 |
| | SNNPR | 4.8% | 4.8% | 4.8% | -0.41 |
| | Somali | 10.6% | 5.2% | 2.9% | 5.67*** |
| | Tigray | 3.9% | 1.4% | 2.4% | 1.15 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 9 Trends in stunting, wasting, underweight, and overweight, by wealth quintiles

| Stunting | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value | Wasting | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|---|
| Poorest | 47.1% | 44.1% | 4.90*** | Poorest | 12.1% | 13.5% | -2.02* |
| Poorer | 46.1% | 42.7% | 2.52* | Poorer | 12.1% | 9.7% | 0.99 |
| Middle | 44.3% | 37.2% | 3.28** | Middle | 8.9% | 10.4% | 0.11 |
| Richer | 44.7% | 34.4% | 4.62*** | Richer | 7.6% | 6.8% | 0.97 |
| Richest | 28.5% | 25.4% | 2.33* | Richest | 5.1% | 7.6% | -0.18 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Underweight | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value | Overweight | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|---|
| Poorest | 34.6% | 31.0% | 2.12* | Poorest | 4.7% | 5.6% | 3.32*** |
| Poorer | 31.7% | 27.6% | 3.00** | Poorer | 4.7% | 3.2% | 2.52*** |
| Middle | 27.8% | 23.2% | 3.57*** | Middle | 4.3% | 3.1% | 0.86 |
| Richer | 25.2% | 17.1% | 4.92*** | Richer | 3.8% | 5.7% | -1.34 |
| Richest | 15.2% | 14.8% | 2.60** | Richest | 4.0% | 4.5% | -0.18 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 10 Trends in undernutrition (BMI<18.5) of adolescents and adults, by sex, area, and region of residence

| Adolescents (15-19 years) | Girls | | | | | Boys | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Ethiopia | 37.0% | 31.1% | 34.6% | 28.0% | 4.60*** | 65.6% | 58.5% | 4.78*** |
| Urban | 23.7% | 21.9% | 26.3% | 20.5% | 0.62 | 57.9% | 51.5% | 2.83** |
| Rural | 40.8% | 33.5% | 37.6% | 30.4% | 4.89*** | 67.7% | 60.2% | 3.87*** |
| Addis Ababa | 22.5% | 18.7% | 22.3% | 20.6% | 0.99 | 51.5% | 41.7% | 2.29* |
| Afar | 40.6% | 44.9% | 47.1% | 45.1% | -1.35 | 75.0% | 72.9% | -0.10 |
| Amhara | 42.7% | 38.7% | 45.8% | 34.3% | 1.86 | 77.1% | 66.6% | 3.31*** |
| Benishangul-Gumuz | 49.0% | 34.9% | 28.3% | 19.6% | 5.50*** | 62.6% | 48.8% | 2.63** |
| Dire Dawa | 35.1% | 37.6% | 31.2% | 27.0% | 1.89 | 62.8% | 50.9% | 1.70 |
| Gambela | 36.6% | 30.2% | 25.5% | 39.3% | -1.11 | 46.4% | 50.9% | 0.82 |
| Harari | 33.6% | 22.7% | 31.1% | 28.4% | 1.13 | 61.4% | 59.2% | 0.30 |
| Oromia | 32.5% | 25.7% | 29.7% | 26.5% | 2.57* | 61.5% | 56.3% | 1.52 |
| SNNPR | 41.8% | 27.1% | 23.9% | 16.9% | 7.65*** | 50.9% | 46.8% | 1.28 |
| Somali | 55.2% | 57.4% | 43.2% | 43.9% | 1.71 | 78.2% | 77.4% | 0.36 |
| Tigray | 40.3% | 45.6% | 51.5% | 44.0% | 0.33 | 83.0% | 74.0% | 3.15** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2011 | 2016 |
|---|---|---|
| Adolescents girls (15-19 years) | 34.6% | 28.0% |
| Adolescent boys (15-19 years) | 65.6% | 58.5% |
| Significance of sex differences (two-tailed test) t value | -25.52*** | -22.3*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adults | Women (20-49 years) | | | | | Men (20-59 years) | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Ethiopia | 25.4% | 22.6% | 22.0% | 19.1% | 10.06*** | 29.1% | 25.8% | 6.41*** |
| Urban | 22.3% | 17.0% | 17.0% | 12.0% | 7.23*** | 23.2% | 17.6% | 4.28*** |
| Rural | 26.0% | 23.7% | 23.5% | 21.0% | 6.57*** | 30.7% | 27.7% | 4.99*** |
| Addis Ababa | 15.3% | 13.7% | 11.6% | 10.7% | 3.66*** | 15.1% | 12.0% | 1.92 |
| Afar | 40.3% | 28.9% | 39.7% | 35.7% | 1.33 | 51.1% | 44.6% | 2.08* |
| Amhara | 25.9% | 21.9% | 22.5% | 18.3% | 4.91*** | 31.9% | 24.8% | 4.00*** |
| Benishangul-Gumuz | 29.9% | 29.0% | 24.2% | 18.9% | 7.03*** | 30.6% | 28.0% | 2.27* |
| Dire Dawa | 22.4% | 20.6% | 21.1% | 19.5% | 1.74 | 29.9% | 21.1% | 3.40*** |
| Gambela | 38.5% | 38.8% | 32.4% | 29.4% | 2.66** | 29.9% | 28.8% | 1.69 |
| Harari | 21.5% | 18.8% | 18.7% | 16.6% | 2.79** | 27.7% | 22.7% | 2.23* |
| Oromia | 24.5% | 21.1% | 23.0% | 21.5% | 2.15** | 28.8% | 26.8% | 0.87 |
| SNNPR | 25.2% | 23.4% | 17.4% | 13.6% | 8.45*** | 24.6% | 23.8% | 1.07 |
| Somali | 42.1% | 27.3% | 28.6% | 24.8% | 6.17*** | 54.4% | 43.8% | 3.53*** |
| Tigray | 29.1% | 31.3% | 32.8% | 28.2% | -1.12 | 34.5% | 32.9% | 0.45 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2011 | 2016 |
|---|---|---|
| Adult women (20-49 years) | 22.0% | 19.1% |
| Adult men (20-59 years) | 29.1% | 25.8% |
| Significance of sex differences (two-tailed test) t value | -11.36*** | -10.61*** |

***p<0.001, **p<0.01, *p<0.05

Source: Authors' calculations using EDHS data.

## Annex 11 Trends in undernutrition (BMI<18.5) of adolescents and adults, by sex and wealth quintiles

| Adolescent girls (15-19 years) | | | | | Adolescent boys (15-19 years) | | |
|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Poorest | 36.5% | 40.8% | 32.8% | 0.60 | 77.4% | 60.7% | 2.85** |
| Poorer | 30.6% | 42.3% | 25.2% | 3.04** | 70.0% | 65.1% | 1.83 |
| Middle | 36.9% | 34.4% | 34.6% | 1.34 | 62.6% | 60.5% | 0.58 |
| Richer | 34.6% | 34.6% | 28.7% | 1.99* | 68.7% | 57.4% | 3.11** |
| Richest | 22.6% | 25.7% | 22.5% | 1.83 | 54.1% | 52.6% | 2.60** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult women (20-49 years) | | | | | Adult men (20-59 years) | | |
|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Poorest | 24.8% | 25.7% | 24.3% | 2.33* | 36.2% | 32.9% | 2.33* |
| Poorer | 26.0% | 24.7% | 21.0% | 3.59*** | 34.5% | 29.4% | 2.90** |
| Middle | 23.3% | 22.0% | 20.2% | 2.72** | 27.2% | 25.6% | 2.57** |
| Richer | 21.9% | 23.9% | 20.0% | 3.22** | 30.1% | 25.2% | 4.15*** |
| Richest | 17.7% | 15.8% | 12.6% | 3.95*** | 20.4% | 18.6% | 3.66*** |

***p<0.001, **p<0.01, *p<0.05

Source: Authors' calculations using EDHS data.

## Annex 12 Trends in short stature of women, by area and region of residence

| Women (15-49 years) | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| Ethiopia | 3.7% | 3.2% | 3.5% | 2.4% | 7.59*** |
| Urban | 2.5% | 1.8% | 2.8% | 1.6% | 2.53** |
| Rural | 4.0% | 3.5% | 3.7% | 2.7% | 7.05*** |
| Addis Ababa | 3.1% | 2.0% | 2.7% | 2.1% | 1.73 |
| Afar | 4.7% | 4.2% | 3.0% | 1.6% | 3.47*** |
| Amhara | 4.2% | 4.4% | 5.1% | 3.0% | 1.88 |
| Benishangul-Gumuz | 3.1% | 1.6% | 3.1% | 1.6% | 2.16* |
| Dire Dawa | 1.2% | 1.3% | 1.2% | 1.8% | -0.91 |
| Gambela | 4.0% | 1.2% | 2.0% | 2.0% | 2.78** |
| Harari | 2.7% | 1.7% | 1.5% | 2.0% | 1.43 |
| Oromia | 3.0% | 2.3% | 2.7% | 2.1% | 2.33* |
| SNNPR | 4.2% | 4.1% | 3.7% | 2.8% | 2.37* |
| Somali | 1.6% | 1.8% | 1.1% | 0.2% | 2.95** |
| Tigray | 4.9% | 2.8% | 3.0% | 2.8% | 3.98*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 13 Trends in short stature of women, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 3.3% | 4.2% | 3.8% | 0.90 |
| Poorer | 4.2% | 4.2% | 3.0% | 2.13* |
| Middle | 3.7% | 3.6% | 2.3% | 0.93 |
| Richer | 3.7% | 3.8% | 2.4% | 1.02 |
| Richest | 1.7% | 2.2% | 1.3% | 0.35 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

# Annex 14 Prevalence of anaemia among children, adolescents, and adults, by sex, area and region of residence

| Children (6-59 months) | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| National | Ethiopia | 53.8% | 44.6% | 57.5% | -5.03*** |
| Sex | Girls | 52.6% | 44.7% | 57.5% | |
| | Boys | 54.9% | 44.4% | 57.6% | |
| | Significance of sex differences (two-tailed test) t value | -1.11 | -0.23 | -0.91 | |
| Area of residence | Urban | 47.6% | 35.7% | 49.2% | -2.50* |
| | Rural | 54.2% | 45.7% | 58.4% | -4.92*** |
| Region | Addis Ababa | 39.9% | 33.0% | 49.1% | -1.81 |
| | Afar | 58.4% | 75.1% | 74.7% | -4.29*** |
| | Amhara | 51.6% | 35.7% | 42.7% | 3.07** |
| | Benishangul-Gumuz | 55.3% | 46.4% | 43.2% | 3.19** |
| | Dire Dawa | 61.3% | 63.9% | 72.5% | -2.88** |
| | Gambela | 62.8% | 50.2% | 56.6% | 0.64 |
| | Harari | 57.8% | 55.2% | 66.8% | -1.88 |
| | Oromia | 56.3% | 52.0% | 65.7% | -3.42*** |
| | SNNPR | 46.6% | 36.9% | 50.8% | -1.57 |
| | Somali | 86.2% | 69.3% | 83.2% | 0.88 |
| | Tigray | 56.6% | 38.0% | 54.1% | 0.84 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescents (15-19 years) | Adolescent girl | | | | Adolescent boy | | |
|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Ethiopia | 25.1% | 13.5% | 20.3% | 0.64 | 6.6% | 7.9% | -2.00* |
| Urban | 16.4% | 9.8% | 18.2% | -1.47 | 2.3% | 3.3% | -2.22** |
| Rural | 27.1% | 14.8% | 20.9% | 1.36 | 7.8% | 9.0% | -1.28 |
| Addis Ababa | 11.6% | 7.7% | 13.7% | -0.71 | 1.4% | 3.5% | -1.07 |
| Afar | 30.2% | 33.8% | 46.4% | -2.10* | 8.9% | 19.4% | -2.11* |
| Amhara | 32.0% | 12.8% | 15.4% | 4.96*** | 7.2% | 6.7% | 0.60 |
| Benishangul-Gumuz | 26.1% | 17.2% | 14.8% | 2.83** | 9.2% | 2.5% | 2.96** |
| Dire Dawa | 23.1% | 23.2% | 24.6% | -0.49 | 7.0% | 8.2% | -0.21 |
| Gambela | 41.2% | 19.7% | 24.5% | 1.92 | 2.1% | 6.6% | -1.18 |
| Harari | 20.0% | 16.4% | 26.2% | -1.66 | 6.5% | 10.0% | -0.72 |
| Oromia | 23.0% | 15.6% | 22.2% | 0.42 | 7.5% | 8.9% | -0.90 |
| SNNPR | 22.6% | 8.7% | 19.7% | 1.40 | 3.2% | 6.0% | -1.30 |
| Somali | 34.4% | 36.0% | 54.2% | -1.57 | 11.9% | 17.7% | -1.35 |
| Tigray | 27.5% | 12.0% | 16.4% | 2.94** | 9.1% | 10.3% | -0.23 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2011 | 2016 |
|---|---|---|
| Adolescents girls (15-19 years) | 13.5% | 20.3% |
| Adolescent boys (15-19 years) | 6.6% | 7.9% |
| Significance of sex differences (two-tailed test) t value | 10.81*** | 14.8*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adults | Adult woman (20-49 years) | | | | Adult man (20-59 years) | | |
|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Ethiopia | 27.1% | 17.7% | 24.7% | 0.74 | 4.7% | 7.1% | -7.33*** |
| Urban | 18.0% | 11.7% | 16.7% | -0.67 | 1.9% | 3.1% | -2.85** |
| Rural | 28.6% | 19.5% | 26.8% | 0.14 | 5.5% | 8.0% | -6.81*** |
| Addis Ababa | 30.0% | 13.2% | 21.2% | 0.56 | 4.9% | 8.2% | -2.14* |
| Afar | 42.1% | 35.4% | 43.9% | -0.56 | 5.3% | 14.1% | -4.70*** |
| Amhara | 30.5% | 18.0% | 17.9% | 6.22*** | 5.2% | 6.2% | -0.69 |
| Benishangul-Gumuz | 25.7% | 20.6% | 28.7% | 5.05*** | 5.5% | 7.7% | 0.43 |
| Dire Dawa | 40.7% | 46.1% | 61.2% | -1.82 | 6.4% | 12.9% | -1.06 |
| Gambela | 33.0% | 19.9% | 20.5% | 3.77*** | 6.6% | 5.8% | -1.03 |
| Harari | 23.9% | 11.9% | 23.3% | -1.31 | 2.9% | 7.1% | -2.59** |
| Oromia | 42.8% | 19.7% | 26.5% | -0.74 | 5.2% | 4.6% | -2.05* |
| SNNPR | 23.3% | 20.2% | 28.3% | 0.49 | 5.1% | 9.2% | -4.41*** |
| Somali | 15.5% | 9.8% | 16.6% | -6.35*** | 1.1% | 2.5% | -3.56*** |
| Tigray | 26.6% | 30.8% | 31.5% | 3.65*** | 7.1% | 9.4% | -2.93** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2011 | 2016 |
|---|---|---|
| Adult women (20-49 years) | 17.7% | 24.7% |
| Adult men (20-59 years) | 4.7% | 7.1% |
| Significance of sex differences (two-tailed test) t value | 36.50*** | 39.12*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 15 Prevalence of anaemia among children, adolescents, and adults, by wealth quintiles

| Children (6-59 months) | | | | |
|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 60.2% | 48.5% | 68.0% | -4.58*** |
| Poorer | 55.4% | 48.2% | 57.7% | -0.72 |
| Middle | 52.8% | 43.1% | 53.7% | -0.05 |
| Richer | 49.4% | 43.2% | 55.1% | -0.15 |
| Richest | 48.8% | 36.4% | 48.0% | -1.84 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescent girls (15-19 years) | | | | | Adolescent boys (15-19 years) | | |
|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Poorest | 29.4% | 16.5% | 25.5% | -1.30 | 9.9% | 14.1% | -2.88** |
| Poorer | 30.8% | 14.2% | 19.3% | 3.00** | 7.9% | 6.4% | 2.10* |
| Middle | 26.6% | 15.8% | 22.5% | 1.21 | 5.9% | 7.6% | -0.39 |
| Richer | 26.6% | 12.4% | 18.4% | 2.29* | 7.5% | 9.4% | -0.70 |
| Richest | 16.8% | 10.5% | 18.1% | -1.02 | 3.3% | 3.9% | -1.03 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult women (20-49 years) | | | | | Adult men (20-59 years) | | |
|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
| Poorest | 32.8% | 21.4% | 36.4% | -3.11** | 7.6% | 11.6% | -5.73*** |
| Poorer | 30.0% | 20.5% | 26.5% | 2.03* | 6.1% | 8.8% | -2.73** |
| Middle | 26.7% | 17.5% | 24.3% | 1.51 | 5.1% | 6.4% | -1.49 |
| Richer | 28.9% | 19.3% | 22.2% | 3.60*** | 3.7% | 6.6% | -2.41* |
| Richest | 18.0% | 11.7% | 17.4% | 0.26 | 1.9% | 3.5% | -3.00** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 16 Trends in full immunization, by sex, area and region of residence

| Children under 5 | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 16.8% | 17.7% | 24.6% | 38.7% | -28.57*** |
| Sex | Girls | 17.3% | 17.2% | 24.9% | 39.2% | |
| | Boys | 16.2% | 18.1% | 24.2% | 38.2% | |
| | Significance of sex differences (two-tailed test) t value | 1.90 | 0.42 | 0.76 | 1.24 | |
| Area of residence | Urban | 42.9% | 47.4% | 46.5% | 65.5% | -7.16*** |
| | Rural | 13.8% | 15.4% | 21.4% | 35.7% | -28.28*** |
| Region | Addis Ababa | 79.5% | 69.3% | 83.9% | 90.0% | -4.27*** |
| | Afar | 2.2% | 3.6% | 7.2% | 15.5% | -6.84*** |
| | Amhara | 17.0% | 17.8% | 26.6% | 48.2% | -14.92*** |
| | Benishangul-Gumuz | 11.2% | 13.4% | 22.2% | 63.9% | -22.98*** |
| | Dire Dawa | 38.7% | 38.2% | 55.0% | 67.2% | -8.95*** |
| | Gambela | 12.9% | 13.8% | 17.5% | 41.2% | -7.45*** |
| | Harari | 40.1% | 32.5% | 38.8% | 42.2% | -0.94 |
| | Oromia | 12.6% | 13.8% | 17.2% | 26.8% | -10.31*** |
| | SNNPR | 11.2% | 18.1% | 22.7% | 45.4% | -20.30*** |
| | Somali | 16.5% | 1.7% | 11.8% | 21.6% | -4.91*** |
| | Tigray | 46.3% | 39.9% | 62.2% | 69.6% | -9.63*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 17 Trends in healthcare seeking behaviour, by sex, area and region of residence

| Children under 5 | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 15.3% | 21.3% | 27.8% | 27% | -10.59*** |
| Sex | Girls | 13.8% | 19.9% | 27.8% | 27.1% | |
| | Boys | 16.8% | 22.7% | 27.7% | 26.6% | |
| | Significance of sex differences (two-tailed test) t value | -2.45* | -1.47 | -0.88 | -0.96 | |
| Area of residence | Urban | 42.2% | 43.8% | 44.0% | 44.4% | -0.31 |
| | Rural | 12.8% | 19.9% | 25.5% | 24.7% | -10.74*** |
| Region | Addis Ababa | 46.6% | 46.1% | 59.6% | 43.3% | 0.29 |
| | Afar | 22.6% | 10.9% | 30.4% | 38.4% | -3.90*** |
| | Amhara | 10.9% | 20.1% | 22.6% | 26.5% | -5.28*** |
| | Benishangul-Gumuz | 30.6% | 25.8% | 46.3% | 42.9% | -3.08** |
| | Dire Dawa | 29.3% | 24.9% | 48.4% | 50.6% | -3.93*** |
| | Gambela | 39.2% | 33.5% | 49.7% | 43.2% | 0.51 |
| | Harari | 40.3% | 31.3% | 45.1% | 47.9% | -1.29 |
| | Oromia | 16.5% | 22.9% | 29.3% | 23.6% | -4.28*** |
| | SNNPR | 14.4% | 21.1% | 29.2% | 31.5% | -6.56*** |
| | Somali | 30.8% | 9.7% | 21.1% | 28.4% | -0.65 |
| | Tigray | 13.5% | 14.7% | 21.7% | 26.4% | -5.28*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 18 Trends in healthcare seeking behaviour, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 14.8% | 18.5% | 20.8% | -5.89*** |
| Poorer | 16.3% | 24.1% | 25.2% | -5.02*** |
| Middle | 23.6% | 27.8% | 25.3% | -2.47*** |
| Richer | 18.8% | 30.9% | 29.4% | -3.85*** |
| Richest | 39.1% | 44.5% | 36.1% | -0.97 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 19 Trends in adequate ANC coverage, by area and region of residence

| Women (15-49 years) | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| Ethiopia | 10.2% | 11.8% | 15.0% | 31.6% | -29.06*** |
| Urban | 42.0% | 54.4% | 45.9% | 62.4% | -6.61*** |
| Rural | 6.2% | 7.9% | 9.7% | 27.1% | -30.72*** |
| Addis Ababa | 75.0% | 82.3% | 86.4% | 88.7% | -4.68*** |
| Afar | 7.0% | 7.8% | 10.0% | 20.8% | -5.36*** |
| Amhara | 4.3% | 7.2% | 10.3% | 31.6% | -16.59*** |
| Benishangul-Gumuz | 11.0% | 10.2% | 12.4% | 41.7% | -12.38*** |
| Dire Dawa | 35.7% | 33.9% | 36.7% | 66.4% | -9.57*** |
| Gambela | 31.3% | 26.0% | 29.8% | 43.5% | -2.93** |
| Harari | 27.6% | 25.9% | 33.2% | 35.2% | -2.64** |
| Oromia | 10.6% | 9.9% | 13.8% | 21.6% | -8.19*** |
| SNNPR | 10.0% | 14.4% | 12.7% | 37.9% | -15.68*** |
| Somali | 3.6% | 4.1% | 6.1% | 11.7% | -5.25*** |
| Tigray | 14.7% | 17.1% | 23.3% | 57.1% | -20.28*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 20 Trends in adequate ANC coverage, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 3.4% | 4.7% | 18.6% | -12.66*** |
| Poorer | 6.1% | 7.0% | 24.8% | -16.94*** |
| Middle | 8.3% | 9.5% | 27.9% | -15.02*** |
| Richer | 8.5% | 15.6% | 36.2% | -16.19*** |
| Richest | 39.1% | 45.0% | 57.1% | -9.12*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 21 Trends in coverage of skilled birth delivery, by area and region of residence

| Women (15-49 years) | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| Ethiopia | 5.7% | 6.6% | 11.1% | 32.8% | -39.38*** |
| Urban | 34.9% | 45.6% | 51.6% | 84.3% | -18.39*** |
| Rural | 2.0% | 2.9% | 4.0% | 25.4% | -39.31*** |
| Addis Ababa | 70.7% | 74.8% | 82.7% | 96.1% | -9.57*** |
| Afar | 6.6% | 5.5% | 7.7% | 20.0% | -4.89*** |
| Amhara | 3.3% | 4.0% | 10.5% | 30.0% | -16.38*** |
| Benishangul-Gumuz | 10.3% | 6.1% | 10.1% | 35.2% | -11.36*** |
| Dire Dawa | 35.8% | 31.9% | 47.8% | 63.1% | -9.25*** |
| Gambela | 22.1% | 15.5% | 28.0% | 49.6% | -8.56*** |
| Harari | 32.0% | 35.7% | 38.2% | 59.3% | -8.40*** |
| Oromia | 4.3% | 5.9% | 8.5% | 24.9% | -15.83*** |
| SNNPR | 4.6% | 4.5% | 7.2% | 33.2% | -18.36*** |
| Somali | 6.1% | 5.5% | 8.9% | 22.2% | -7.65*** |
| Tigray | 6.2% | 7.5% | 12.5% | 66.4% | -31.29*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 22 Trends in coverage of skilled birth delivery, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 0.8% | 1.7% | 13.2% | -14.57*** |
| Poorer | 1.3% | 2.8% | 25.6% | -21.97*** |
| Middle | 1.9% | 3.0% | 28.2% | -21.47*** |
| Richer | 4.8% | 7.6% | 32.6% | -20.10*** |
| Richest | 29.2% | 47.3% | 74.3% | -23.56*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

# Annex 23 Tends in comprehensive knowledge about HIV/AIDS among adolescents and adults, by area and region of residence

| Adolescents (15-19 years) | Adolescent girls | | | | Adolescent boys | | | |
|---|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Ethiopia | 21.2% | 25.8% | 23.8% | 1.33 | 32.1% | 33.1% | 37.5% | -0.02 |
| Urban | 43.5% | 39.6% | 41.5% | 4.79*** | 58.3% | 45.7% | 45.1% | 4.02*** |
| Rural | 15.1% | 21.0% | 18.1% | -2.56* | 27.0% | 29.7% | 35.7% | -2.69** |
| Addis Ababa | 47.7% | 34.3% | 38.6% | 2.64** | 49.1% | 39.7% | 57.0% | -0.99 |
| Afar | 16.9% | 9.6% | 14.3% | 0.27 | 10.5% | 29.8% | 30.3% | -2.65** |
| Amhara | 23.3% | 24.2% | 29.1% | -1.49 | 44.4% | 28.8% | 44.7% | 0.03 |
| Benishangul-Gumuz | 17.6% | 28.6% | 18.4% | 1.17 | 38.0% | 33.5% | 25.5% | 2.46* |
| Dire Dawa | 33.8% | 24.8% | 24.4% | 2.46* | 40.7% | 54.3% | 44.2% | 0.20 |
| Gambela | 10.8% | 15.8% | 26.2% | -2.89** | 21.4% | 25.7% | 31.3% | -0.83 |
| Harari | 29.4% | 24.6% | 16.1% | 2.75** | 54.8% | 25.2% | 37.0% | 2.48* |
| Oromia | 20.3% | 25.1% | 22.1% | -0.71 | 23.5% | 31.0% | 38.1% | -4.11*** |
| SNNPR | 16.3% | 27.8% | 19.3% | -1.03 | 27.4% | 43.8% | 28.4% | -0.16 |
| Somali | 2.0% | 8.7% | 4.8% | -1.91 | 7.7% | 11.4% | 6.7% | -0.55 |
| Tigray | 16.5% | 31.2% | 26.7% | -4.11*** | 47.9% | 37.3% | 41.3% | 0.53 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2005 | 2011 | 2016 |
|---|---|---|---|
| Adolescents girls (15-19 years) | 21.2% | 25.8% | 23.8% |
| Adolescent boys (15-19 years) | 32.1% | 33.1% | 37.5% |
| Significance of sex differences (two-tailed test) t value | -7.39*** | -8.27*** | -10.56*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adults | Adult women (20-49 years) | | | | | Adult men (20-59 years) | | |
|---|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Ethiopia | 14.0% | 17.7% | 19.0% | -4.17*** | 27.9% | 32.9% | 37.6% | -6.57*** |
| Urban | 41.9% | 36.9% | 38.7% | 4.66*** | 54.8% | 46.7% | 49.4% | 3.51*** |
| Rural | 8.5% | 11.9% | 13.6% | -8.57*** | 23.3% | 29.0% | 34.7% | -9.10*** |
| Addis Ababa | 50.6% | 32.5% | 45.9% | 1.52 | 54.1% | 46.7% | 50.6% | 0.59 |
| Afar | 11.6% | 4.8% | 11.5% | 0.67 | 23.2% | 24.6% | 32.4% | -3.50*** |
| Amhara | 12.7% | 15.2% | 20.4% | -4.41*** | 37.7% | 28.0% | 42.0% | -1.41 |
| Benishangul-Gumuz | 9.3% | 18.3% | 12.6% | -1.04 | 28.8% | 32.7% | 31.5% | 0.15 |
| Dire Dawa | 25.1% | 21.4% | 21.9% | 2.83** | 41.4% | 48.3% | 43.9% | 0.18 |
| Gambela | 8.8% | 17.0% | 22.1% | -4.29*** | 23.8% | 40.0% | 44.7% | -3.26** |
| Harari | 27.6% | 25.5% | 21.2% | 2.38* | 50.9% | 23.9% | 34.4% | 4.17*** |
| Oromia | 13.4% | 16.3% | 15.6% | -1.74 | 21.0% | 31.7% | 33.8% | -6.77*** |
| SNNPR | 10.2% | 20.5% | 16.9% | -4.85*** | 24.3% | 39.1% | 37.6% | -5.69*** |
| Somali | 4.7% | 4.8% | 3.1% | -1.62 | 8.2% | 8.3% | 12.7% | -2.92** |
| Tigray | 11.5% | 19.3% | 24.4% | -8.81*** | 29.8% | 38.8% | 42.7% | -4.74*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2005 | 2011 | 2016 |
|---|---|---|---|
| Adult women (20-49 years) | 14.0% | 17.7% | 19.0% |
| Adult men (20-59 years) | 27.9% | 32.9% | 37.6% |
| Significance of sex differences (two-tailed test) t value | -19.14*** | -27.22*** | -28.68*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 24 Trends in comprehensive knowledge about HIV/AIDS among adolescents and adults, by wealth quintiles

| | Adolescent girls (15-19 years) | | | | Adolescent boys (15-19 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 9.4% | 14.5% | 10.1% | -1.42 | 20.9% | 21.5% | 28.8% | -1.26 |
| Poorer | 11.7% | 15.3% | 14.2% | -1.82 | 26.6% | 25.2% | 31.2% | -1.53 |
| Middle | 15.7% | 25.8% | 18.1% | -0.84 | 26.9% | 32.1% | 34.3% | -0.90 |
| Richer | 17.1% | 25.9% | 25.4% | -3.01** | 29.7% | 36.1% | 37.4% | -1.26 |
| Richest | 37.6% | 40.0% | 38.4% | 3.25** | 48.1% | 44.9% | 49.3% | 1.79 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| | Adult women (20-49 years) | | | | Adult men (20-49 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 5.2% | 6.9% | 9.00% | -3.67*** | 15.4% | 21.2% | 28.8% | -6.19*** |
| Poorer | 7.2% | 9.4% | 12.9% | -5.79*** | 21.4% | 24.9% | 33.7% | -5.00*** |
| Middle | 7.9% | 11.5% | 12.8% | -5.05*** | 22.7% | 28.6% | 35.4% | -4.80*** |
| Richer | 10.4% | 16.1% | 16.5% | -5.18*** | 25.7% | 35.4% | 35.8% | -4.30*** |
| Richest | 34.2% | 37.4% | 36.8% | 1.67 | 49.5% | 48.7% | 49.2% | 1.41 |

***p<0.001, **p<0.01, *p<0.05
Source: Author's calculations using EDHS data.

# Annex 25 Trends in knowledge about MTCT of HIV among adolescents and adults, by sex, area and region of residence, and wealth quintiles

| Adolescent girls (15-19 years) | | | | | |
|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 38.2% | 41.1% | 23.1% | 26.4% | 9.77*** |
| Urban | 21.9% | 23.2% | 10.4% | 12.4% | 5.29*** |
| Rural | 42.9% | 46.0% | 27.6% | 31.0% | 8.21*** |
| Addis Ababa | 9.9% | 9.8% | 5.0% | 4.2% | 4.06*** |
| Afar | 48.8% | 33.9% | 33.0% | 32.1% | 3.82*** |
| Amhara | 42.7% | 46.2% | 17.1% | 17.1% | 7.60*** |
| Benishangul-Gumuz | 39.4% | 36.5% | 20.6% | 21.5% | 3.60*** |
| Dire Dawa | 31.3% | 18.3% | 14.8% | 12.6% | 6.13*** |
| Gambela | 30.4% | 25.7% | 29.5% | 19.9% | 0.84 |
| Harari | 10.3% | 35.7% | 21.2% | 19.8% | -2.70** |
| Oromia | 37.3% | 44.8% | 22.7% | 33.7% | 1.01 |
| SNNPR | 44.3% | 39.1% | 37.6% | 31.8% | 3.35*** |
| Somali | 34.0% | 39.5% | 44.3% | 18.8% | 4.67*** |
| Tigray | 35.7% | 40.5% | 19.6% | 26.2% | 3.32*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescent boys (15-19 years) | | | | | |
|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 36.7% | 18.6% | 14.5% | 10.8% | 12.07*** |
| Urban | 5.3% | 7.0% | 6.5% | 4.3% | 1.57 |
| Rural | 42.3% | 20.9% | 16.7% | 12.3% | 12.52*** |
| Addis Ababa | 7.3% | 1.2% | 1.6% | 0.6% | 3.07** |
| Afar | 49.2% | 33.1% | 27.0% | 6.4% | 7.06*** |
| Amhara | 20.9% | 17.3% | 13.2% | 13.9% | 1.66 |
| Benishangul-Gumuz | 9.1% | 29.9% | 19.1% | 5.6% | 1.02 |
| Dire Dawa | 7.4% | 10.1% | 9.6% | 4.5% | 0.66 |
| Gambela | 12.4% | 16.7% | 10.0% | 11.1% | 1.25 |
| Harari | 4.6% | 12.1% | 12.3% | 7.8% | -0.91 |
| Oromia | 46.5% | 19.4% | 12.6% | 10.0% | 9.28*** |
| SNNPR | 45.9% | 21.6% | 19.2% | 6.9% | 10.92*** |
| Somali | 20.1% | 13.0% | 20.3% | 7.3% | 3.05** |
| Tigray | 33.3% | 21.3% | 22.3% | 22.1% | 2.43* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adolescents girls (15-19 years) | 38.2% | 41.1% | 23.1% | 26.4% |
| Adolescent boys (15-19 years) | 36.7% | 18.6% | 14.5% | 10.8% |
| Significance of sex differences (two-tailed test) t value | 2.03* | 12.0*** | 7.25*** | 12.30*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescent girls (15-19 years) | | | | |
|---|---|---|---|---|
| **Wealth quintiles** | **2005** | **2011** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** |
| Poorest | 44.2% | 30.2% | 35.4% | 2.32* |
| Poorer | 49.5% | 29.4% | 38.8% | 3.67*** |
| Middle | 49.6% | 30.6% | 30.9% | 6.46*** |
| Richer | 46.5% | 20.3% | 22.2% | 8.68*** |
| Richest | 26.4% | 11.7% | 15.4% | 6.58*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescent boys (15-19 years) | | | | |
|---|---|---|---|---|
| **Wealth quintiles** | **2005** | **2011** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** |
| Poorest | 27.3% | 20.4% | 13.8% | 5.56*** |
| Poorer | 21.3% | 20.6% | 13.7% | 2.10* |
| Middle | 15.6% | 14.4% | 13.4% | 0.80 |
| Richer | 20.0% | 13.8% | 10.2% | 3.61*** |
| Richest | 11.8% | 6.9% | 5.5% | 2.28* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult women (20-49 years) | | | | | |
|---|---|---|---|---|---|
| | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 41.2% | 47.1% | 32.3% | 30.9% | 17.70*** |
| Urban | 22.1% | 25.3% | 14.4% | 14.4% | 9.01*** |
| Rural | 45.1% | 51.4% | 37.8% | 35.5% | 13.40*** |
| Addis Ababa | 9.2% | 9.8% | 5.6% | 3.4% | 6.56*** |
| Afar | 63.4% | 41.6% | 41.4% | 40.7% | 8.68*** |
| Amhara | 43.7% | 53.7% | 27.2% | 25.2% | 10.29*** |
| Benishangul-Gumuz | 44.3% | 38.4% | 27.1% | 26.7% | 6.23*** |
| Dire Dawa | 34.7% | 27.5% | 22.6% | 12.3% | 13.22*** |
| Gambela | 32.2% | 37.9% | 30.0% | 24.6% | 2.43** |
| Harari | 6.7% | 29.9% | 25.7% | 22.4% | -8.46*** |
| Oromia | 40.7% | 48.6% | 32.8% | 37.0% | 2.54* |
| SNNPR | 45.9% | 49.1% | 45.8% | 36.7% | 5.39*** |
| Somali | 52.7% | 45.9% | 47.9% | 20.4% | 11.00*** |
| Tigray | 34.7% | 41.5% | 26.4% | 29.3% | 3.01** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adults | Adult men (20-59 years) | | | | |
|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 30.7% | 17.5% | 14.4% | 9.0% | 22.26*** |
| Urban | 10.2% | 4.7% | 2.7% | 2.9% | 5.44*** |
| Rural | 33.9% | 19.7% | 17.7% | 10.5% | 20.76*** |
| Addis Ababa | 3.8% | 2.9% | 1.0% | 0.6% | 3.69*** |
| Afar | 32.4% | 33.6% | 16.8% | 4.2% | 10.87*** |
| Amhara | 23.0% | 14.8% | 13.9% | 11.5% | 4.90*** |
| Benishangul-Gumuz | 19.8% | 23.0% | 16.9% | 7.8% | 3.93*** |
| Dire Dawa | 12.2% | 11.6% | 6.2% | 2.7% | 5.67*** |
| Gambela | 25.7% | 14.3% | 9.8% | 8.4% | 5.67*** |
| Harari | 2.3% | 11.0% | 8.9% | 7.8% | -2.36* |
| Oromia | 41.2% | 20.6% | 12.0% | 10.6% | 14.23*** |
| SNNPR | 28.0% | 20.8% | 24.1% | 6.5% | 10.88*** |
| Somali | 24.9% | 12.3% | 18.1% | 4.3% | 7.20*** |
| Tigray | 21.7% | 11.6% | 14.5% | 8.3% | 4.87*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adult women (20-49 years) | 41.2% | 47.1% | 32.3% | 30.9% |
| Adult men (20-59 years) | 30.7% | 17.5% | 14.4% | 9.0% |
| Significance of sex differences (two-tailed test) t value | 11.56*** | 30.22*** | 32.05*** | 37.88*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult women (20-49 years) | | | | |
|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 48.5% | 43.1% | 39.0% | 7.68*** |
| Poorer | 52.1% | 39.3% | 39.2% | 7.97*** |
| Middle | 53.9% | 36.5% | 35.8% | 9.90*** |
| Richer | 53.0% | 34.2% | 29.6% | 12.23*** |
| Richest | 31.7% | 14.9% | 16.8% | 14.11*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult men (20-59 years) | | | | |
|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 22.6% | 23.0% | 13.7% | 10.89*** |
| Poorer | 24.6% | 20.4% | 12.2% | 7.24*** |
| Middle | 18.9% | 17.7% | 10.2% | 5.99*** |
| Richer | 16.7% | 11.6% | 8.6% | 5.94*** |
| Richest | 7.0% | 3.3% | 3.2% | 6.39*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 26 Trends in HIV prevalence by sex, area, and region of residence

| | 2005 | 2011 | 2016 |
|---|---|---|---|
| Ethiopia | 1.4% | 1.5% | 0.9% |
| Women (15-49) | 1.9% | 1.9% | 1.2% |
| Men (15-59) | 0.9% | 1.0% | 0.6% |
| Urban | 5.5% | 4.2% | 2.9% |
| Rural | 0.7% | 0.6% | 0.4% |
| Addis Ababa | 4.7% | 5.2% | 3.4% |
| Afar | 2.9% | 1.8% | 1.4% |
| Amhara | 1.7% | 1.6% | 1.2% |
| Benishangul-Gumuz | 0.5% | 1.3% | 1.0% |
| Dire Dawa | 3.2% | 4.0% | 2.5% |
| Gambela | 6.0% | 6.5% | 4.8% |
| Harari | 3.5% | 2.8% | 2.4% |
| Oromia | 1.4% | 1.0% | 0.7% |
| SNNPR | 0.2% | 0.9% | 0.4% |
| Somali | 0.7% | 1.1% | <0.1% |
| Tigray | 2.1% | 1.8% | 1.2% |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 27 Trends in HIV testing incidence, by sex, area and region of residence, and wealth quintiles

| Women age 15-49 years | 2005 | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Ethiopia | 4.8% | 38.4% | 43.9% | -11.93*** |
| Urban | 18.6% | 63.6% | 70.2% | -6.00*** |
| Rural | 1.6% | 30.4% | 36.4% | -9.87*** |
| Addis Ababa | N/A | 66.3% | 72.9% | -4.30*** |
| Afar | N/A | 29.2% | 40.6% | -5.41*** |
| Amhara | N/A | 36.6% | 52.8% | -10.98*** |
| Benishangul-Gumuz | N/A | 38.7% | 46.2% | -3.82*** |
| Dire Dawa | N/A | 67.1% | 63.9% | 0.60 |
| Gambela | N/A | 49.3% | 61.2% | -8.37*** |
| Harari | N/A | 58.3% | 58.2% | -0.82 |
| Oromia | N/A | 34.8% | 32.4% | 1.69 |
| SNNPR | N/A | 34.4% | 41.7% | -6.12*** |
| Somali | N/A | 11.4% | 13.9% | -4.05*** |
| Tigray | N/A | 60.3% | 66.3% | -3.49*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Women age 15-49 years | | | |
|---|---|---|---|
| **Wealth quintiles** | **2011** | **2016** | **Significance of change 2011-2016 (two-tailed test) t value** |
| Poorest | 20.0% | 24.4% | 5.07*** |
| Poorer | 26.2% | 32.9% | -6.18*** |
| Middle | 31.4% | 36.4% | -5.20*** |
| Richer | 40.2% | 47.0% | -6.11*** |
| Richest | 63.8% | 67.0% | -6.18*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Men age 15-59 years | 2005 | 2011 | 2016 | Significance of change 2011-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Ethiopia | 5.3% | 39.9% | 45.4% | -56.47*** |
| Urban | 19.2% | 57.5% | 67.7% | -32.40*** |
| Rural | 2.7% | 34.9% | 39.9% | -47.50*** |
| Addis Ababa | N/A | 59.8% | 73.0% | -20.87*** |
| Afar | N/A | 34.2% | 50.0% | -15.01*** |
| Amhara | N/A | 42.4% | 54.7% | -28.04*** |
| Benishangul-Gumuz | N/A | 41.8% | 49.2% | -15.87*** |
| Dire Dawa | N/A | 62.9% | 62.6% | -15.60*** |
| Gambela | N/A | 54.6% | 63.8% | -17.54*** |
| Harari | N/A | 44.1% | 35.2% | 5.73*** |
| Oromia | N/A | 33.1% | 35.8% | -19.72*** |
| SNNPR | N/A | 41.4% | 44.3% | -23.05*** |
| Somali | N/A | 18.9% | 13.9% | -5.69*** |
| Tigray | N/A | 53.8% | 58.5% | -23.72*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Men age 15-59 years | | | |
|---|---|---|---|
| **Wealth quintiles** | **2011** | **2016** | **Significance of change 2011-2016 (two-tailed test) t value** |
| Poorest | 24.8% | 26.7% | -19.18*** |
| Poorer | 31.3% | 36.6% | -23.11*** |
| Middle | 34.7% | 38.4% | -21.68*** |
| Richer | 42.2% | 49.2% | -26.56*** |
| Richest | 59.2% | 66.1% | -40.24*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 28 HIV testing incidence, adolescents and adults, by sex, region, and area of residence, 2016

| 2016 | Adolescent girls (15-19 years) | Adolescent boys (15-19 years) | Adult women (20-49 years) | Adult men (20-59 years) |
|---|---|---|---|---|
| Ethiopia | 25.2% | 20.0% | 49.0% | 52.0% |
| Urban | 40.1% | 31.4% | 79.6% | 76.9% |
| Rural | 20.4% | 17.3% | 40.6% | 45.8% |
| Addis Ababa | 33.7% | 30.4% | 85.1% | 79.9% |
| Afar | 27.5% | 32.4% | 44.5% | 53.6% |
| Amhara | 30.1% | 21.2% | 58.5% | 63.3% |
| Benishangul-Gumuz | 38.2% | 29.2% | 48.4% | 53.8% |
| Dire Dawa | 51.4% | 43.4% | 67.5% | 66.8% |
| Gambela | 48.6% | 33.0% | 64.6% | 72.2% |
| Harari | 30.8% | 27.6% | 64.8% | 36.8% |
| Oromia | 17.8% | 14.2% | 36.5% | 41.3% |
| SNNPR | 28.0% | 27.9% | 45.3% | 48.6% |
| Somali | 10.3% | 10.7% | 15.0% | 15.0% |
| Tigray | 34.4% | 18.9% | 76.3% | 71.5% |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2016 |
|---|---|
| Adolescents girls (15-19 years) | 25.2% |
| Adolescent boys (15-19 years) | 20.0% |
| Significance of sex differences (two-tailed test) t value | 5.47*** |
| Adult women (20-49 years) | 49.0% |
| Adult men (20-59 years) | 52.0% |
| Significance of sex differences (two-tailed test) t value | -0.90 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

# Annex 29 Trends in knowledge about modern contraception, adolescents and adults, by sex, area, and region of residence

| Adolescent girls (15-19 years) | | | | | |
|---|---|---|---|---|---|
| Percentage who know about at least one modern contraception method | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 68.0% | 81.0% | 95.7% | 96.9% | -24.30 *** |
| Urban | 92.8% | 95.5% | 98.7% | 98.8% | -3.14** |
| Rural | 60.9% | 77.1% | 94.7% | 96.2% | -25.81*** |
| Addis Ababa | 96.2% | 97.3% | 99.3% | 98.2% | -2.04* |
| Afar | 65.5% | 56.9% | 78.2% | 87.5% | -5.00*** |
| Amhara | 76.1% | 83.3% | 96.7% | 99.7% | -10.27*** |
| Benishangul-Gumuz | 55.4% | 53.9% | 93.1% | 95.1% | -11.27*** |
| Dire Dawa | 85.0% | 90.5% | 96.9% | 98.7% | -5.94*** |
| Gambela | 71.8% | 65.8% | 96.1% | 96.6% | -7.16*** |
| Harari | 75.4% | 94.5% | 96.9% | 93.9% | -5.14*** |
| Oromia | 65.7% | 88.7% | 94.8% | 97.1% | -13.31*** |
| SNNPR | 51.3% | 67.1% | 98.2% | 98.7% | -18.20*** |
| Somali | 59.7% | 12.9% | 64.1% | 59.3% | -2.93** |
| Tigray | 81.6% | 87.0% | 98.0% | 98.8% | -8.49*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescent boys (15-19 years) | | | | | |
|---|---|---|---|---|---|
| Percentage who know about at least one modern contraception method | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 69.8% | 85.5% | 96.2% | 94.7% | -15.22*** |
| Urban | 99.0% | 99.5% | 98.7% | 98.2% | 0.83 |
| Rural | 64.6% | 82.8% | 95.6% | 93.9% | -16.78*** |
| Addis Ababa | 95.7% | 97.2% | 100.0% | 100.0% | -2.80** |
| Afar | 48.7% | 84.3% | 93.4% | 97.4% | -7.38*** |
| Amhara | 72.5% | 84.9% | 94.6% | 97.0% | -7.30*** |
| Benishangul-Gumuz | 65.7% | 82.7% | 97.8% | 96.3% | -7.62*** |
| Dire Dawa | 95.2% | 96.4% | 98.4% | 97.4% | -0.10 |
| Gambela | 65.3% | 95.5% | 97.4% | 97.8% | -6.67*** |
| Harari | 82.9% | 98.6% | 99.3% | 98.0% | -3.77*** |
| Oromia | 63.9% | 90.5% | 96.0% | 96.9% | -10.80*** |
| SNNPR | 69.3% | 80.1% | 98.9% | 90.3% | -5.00*** |
| Somali | 62.6% | 39.6% | 81.3% | 64.4% | -1.70 |
| Tigray | 83.6% | 90.9% | 99.2% | 97.8% | -6.54*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adolescents girls (15-19 years) | 68.0% | 81.0% | 95.7% | 96.9% |
| Adolescent boys (15-19 years) | 69.8% | 85.5% | 96.2% | 94.7% |
| Significance of sex differences (two-tailed test) t value | -0.45 | -5.32*** | -5.49*** | -0.70 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult women (20-49 years) | | | | | |
|---|---|---|---|---|---|
| **Percentage who know about at least one modern contraception method** | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 84.8% | 87.4% | 97.4% | 98.6% | -36.75*** |
| Urban | 97.1% | 96.9% | 99.0% | 99.5% | -6.90*** |
| Rural | 82.3% | 85.6% | 97.0% | 98.4% | -35.37*** |
| Addis Ababa | 98.0% | 99.2% | 99.8% | 100.0% | -5.08*** |
| Afar | 60.0% | 62.9% | 86.7% | 89.3% | -13.53*** |
| Amhara | 87.5% | 89.7% | 98.4% | 99.9% | -13.73*** |
| Benishangul-Gumuz | 68.9% | 56.0% | 90.8% | 97.5% | -20.01*** |
| Dire Dawa | 94.9% | 96.1% | 99.0% | 99.6% | -6.39*** |
| Gambela | 65.1% | 52.8% | 93.0% | 97.1% | -18.45*** |
| Harari | 92.7% | 97.5% | 99.4% | 97.3% | -3.88*** |
| Oromia | 86.9% | 94.0% | 96.7% | 99.0% | -13.44*** |
| SNNPR | 76.3% | 81.4% | 99.2% | 99.2% | -20.23*** |
| Somali | 58.9% | 30.4% | 76.5% | 77.7% | -9.91*** |
| Tigray | 94.7% | 97.0% | 99.3% | 99.8% | -8.07*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult men (20-59 years) | | | | | |
|---|---|---|---|---|---|
| **Percentage who know about at least one modern contraception method** | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 89.1% | 92.1% | 98.8% | 98.9% | -23.18*** |
| Urban | 98.4% | 99.2% | 99.8% | 99.4% | -3.63*** |
| Rural | 87.6% | 90.9% | 98.6% | 98.8% | -22.24*** |
| Addis Ababa | 98.0% | 98.9% | 100.0% | 100.0% | -4.38*** |
| Afar | 62.4% | 90.1% | 95.4% | 98.4% | -15.91*** |
| Amhara | 90.0% | 95.1% | 99.3% | 99.8% | -11.36*** |
| Benishangul-Gumuz | 78.3% | 81.8% | 96.2% | 97.7% | -11.30*** |
| Dire Dawa | 95.5% | 95.9% | 99.7% | 99.3% | -3.61*** |
| Gambela | 85.9% | 84.0% | 98.1% | 98.7% | -7.86*** |
| Harari | 95.3% | 99.2% | 99.8% | 99.2% | -3.39*** |
| Oromia | 87.6% | 93.8% | 98.5% | 99.5% | -12.43*** |
| SNNPR | 90.8% | 89.3% | 99.5% | 98.2% | -6.69*** |
| Somali | 79.3% | 50.1% | 91.0% | 81.5% | -1.41 |
| Tigray | 94.5% | 99.5% | 99.8% | 99.9% | -6.90*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adult women (20-49 years) | 84.8% | 87.4% | 97.4% | 98.6% |
| Adult men (20-59 years) | 89.1% | 92.1% | 98.8% | 98.9% |
| Significance of sex differences (two-tailed test) t value | -5.82*** | -13.50*** | -13.0*** | -7.47*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 30 Trends in knowledge about modern contraception, adolescents and adults, by wealth quintiles

| | Adolescent girls (15-19 years) | | | | Adolescent boys (15-19 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 68.7% | 91.5% | 88.4% | -9.77*** | 72.4% | 93.8% | 89.1% | -4.90*** |
| Poorer | 74.0% | 96.1% | 98.6% | -10.02*** | 82.5% | 94.8% | 93.0% | -4.35*** |
| Middle | 79.2% | 96.1% | 98.0% | -10.41*** | 85.6% | 96.0% | 93.6% | -4.09*** |
| Richer | 82.3% | 95.0% | 98.0% | -7.71*** | 88.3% | 96.0% | 95.2% | -2.84** |
| Richest | 90.8% | 98.5% | 98.5% | -5.15*** | 93.8% | 99.4% | 99.6% | -1.71 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| | Adult women (20-49 years) | | | | Adult men (20-59 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 75.6% | 95.0% | 95.2% | -25.44*** | 82.6% | 97.1% | 96.6% | -11.70*** |
| Poorer | 86.6% | 97.0% | 99.3% | -17.91*** | 91.5% | 98.5% | 98.8% | -10.15*** |
| Middle | 87.3% | 97.7% | 98.8% | -14.66*** | 92.2% | 99.0% | 99.3% | -9.21*** |
| Richer | 89.2% | 97.4% | 99.9% | -14.21*** | 94.6% | 99.5% | 99.4% | -8.11*** |
| Richest | 96.0% | 99.3% | 99.6% | -9.17*** | 98.0% | 99.7% | 99.7% | -5.08*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 31 Trends in the unmet need for family planning, by area and region of residence

| Women age 15-49 years | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| Ethiopia | 28.7% | 14.7% | 21.0% | 18.3% | 17.11*** |
| Urban | 17.1% | 4.8% | 11.3% | 8.4% | 7.72*** |
| Rural | 30.7% | 16.2% | 23.5% | 20.6% | 14.21*** |
| Addis Ababa | 13.1% | 3.18% | 7.9% | 6.8% | 5.13*** |
| Afar | 10.3% | 7.15% | 14.4% | 13.8% | -1.78 |
| Amhara | 31.1% | 10.6% | 17.5% | 13.3% | 12.08*** |
| Benishangul-Gumuz | 27.2% | 12.9% | 21.5% | 18.2% | 4.00*** |
| Dire Dawa | 16.7% | 6.8% | 18.3% | 13.9% | 2.41* |
| Gambela | 29.2% | 7.8% | 14.1% | 18.0% | 4.99*** |
| Harari | 20.8% | 12.4% | 19.5% | 17.0% | 1.92 |
| Oromia | 31.1% | 19.0% | 26.0% | 25.1% | 4.21*** |
| SNNPR | 28.8% | 18.0% | 22.1% | 18.2% | 6.91*** |
| Somali | 11.0% | 7.4% | 21.1% | 9.7% | 0.60 |
| Tigray | 20.8% | 11.7% | 15.8% | 12.3% | 6.14*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 32 Trends in the unmet need for family planning, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 14.3% | 24.8% | 22.2% | -6.43*** |
| Poorer | 18.4% | 23.3% | 22.7% | -3.13*** |
| Middle | 16.2% | 24.1% | 19.9% | -2.81*** |
| Richer | 15.7% | 22.4% | 17.4% | -1.21 |
| Richest | 8.3% | 11.6% | 10.8% | -3.72*** |

***p<0.001, **p<0.01, *p<0.05

## Annex 33 Trends in exposure to family planning information, adolescents and adults, by sex, area and region of residence

| Percentage who had exposure to family planning messages during the last few months | Adolescent girls (15-19 years) | | | | | Adolescent boys (15-19 years) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 35.4% | 56.9% | 57.5% | 49.4% | -8.02*** | 38.6% | 44.8% | 60.0% | 43.7% | 0.66 |
| Urban | 63.3% | 82.0% | 81.2% | 76.2% | -3.82*** | 86.5% | 72.0% | 80.0% | 67.1% | 5.29*** |
| Rural | 27.5% | 50.1% | 49.2% | 40.8% | -7.14*** | 30.0% | 39.5% | 54.6% | 38.1% | -2.38* |
| Addis Ababa | 61.6% | 76.7% | 85.0% | 77.9% | -4.98*** | 81.0% | 76.2% | 94.0% | 81.9% | -0.03 |
| Afar | 47.1% | 26.7% | 30.0% | 40.8% | 1.22 | 34.6% | 31.4% | 64.0% | 43.2% | -0.70 |
| Amhara | 45.5% | 55.2% | 60.6% | 55.4% | -2.64** | 33.5% | 41.2% | 51.6% | 40.7% | -1.53 |
| Benishangul-Gumuz | 27.0% | 34.4% | 52.8% | 50.4% | -5.00*** | 22.6% | 46.7% | 57.7% | 37.5% | -1.31 |
| Dire Dawa | 59.8% | 74.2% | 71.8% | 61.5% | 0.13 | 73.3% | 73.6% | 85.9% | 58.6% | 1.29 |
| Gambela | 42.2% | 31.6% | 52.0% | 46.9% | -0.73 | 46.8% | 48.0% | 59.6% | 34.5% | 0.00 |
| Harari | 40.3% | 82.9% | 69.7% | 64.1% | -5.11*** | 52.7% | 79.2% | 84.5% | 49.7% | 0.78 |
| Oromia | 25.6% | 61.4% | 52.0% | 43.6% | -6.82*** | 32.7% | 52.9% | 65.4% | 46.5% | -2.25 |
| SNNPR | 25.3% | 46.6% | 52.3% | 44.1% | -5.92*** | 35.3% | 33.2% | 57.4% | 37.4% | -0.24 |
| Somali | 41.9% | 10.5% | 42.4% | 19.2% | 0.69 | 20.2% | 20.3% | 43.8% | 8.9% | 0.90 |
| Tigray | 70.0% | 72.6% | 74.5% | 63.1% | 1.44 | 82.1% | 41.8% | 53.9% | 55.5% | 2.45* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adolescents girls (15-19 years) | 35.4% | 56.9% | 57.5% | 49.4% |
| Adolescent boys (15-19 years) | 38.6% | 44.8% | 60.0% | 43.7% |
| Significance of sex differences (two-tailed test) t value | -1.36 | 4.65*** | -3.57*** | 6.20*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Percentage who had exposure to family planning messages during the last few months | Adult women (20-49 years) | | | | | Adult men (20-59 years) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 44.6% | 55.4% | 56.4% | 55.5% | -14.38*** | 50.0% | 57.6% | 73.8% | 64.7% | -8.16*** |
| Urban | 69.7% | 80.1% | 78.9% | 81.0% | -9.24*** | 85.2% | 81.1% | 88.4% | 78.6% | 2.26* |
| Rural | 39.5% | 50.6% | 49.6% | 48.5% | -8.86*** | 44.4% | 53.6% | 69.7% | 61.3% | -9.32*** |
| Addis Ababa | 69.4% | 81.0% | 89.1% | 85.6% | -10.68*** | 81.4% | 76.0% | 94.0% | 86.2% | -1.67 |
| Afar | 36.1% | 28.5% | 29.6% | 42.9% | -2.04* | 29.8% | 46.6% | 63.6% | 51.7% | -4.70*** |
| Amhara | 55.0% | 55.2% | 59.1% | 62.9% | -3.41*** | 44.4% | 58.6% | 73.3% | 69.6% | -7.57*** |
| Benishangul-Gumuz | 32.2% | 30.5% | 45.9% | 50.6% | -6.88*** | 42.0% | 53.6% | 68.3% | 56.4% | -3.08** |
| Dire Dawa | 68.4% | 74.4% | 71.4% | 60.3% | 3.01** | 69.1% | 72.3% | 91.7% | 68.6% | -0.39 |
| Gambela | 36.6% | 25.3% | 46.3% | 52.1% | -7.06*** | 50.0% | 52.0% | 74.7% | 55.3% | -0.61 |
| Harari | 44.0% | 88.3% | 69.8% | 70.7% | -11.61*** | 57.4% | 73.2% | 89.1% | 63.0% | -0.79 |
| Oromia | 32.9% | 59.3% | 50.6% | 49.3% | -10.43*** | 47.6% | 62.5% | 73.5% | 63.3% | -5.54*** |
| SNNPR | 36.8% | 46.7% | 50.4% | 48.7% | -7.26*** | 49.7% | 46.5% | 71.6% | 59.2% | -3.06** |
| Somali | 33.0% | 11.5% | 44.9% | 23.5% | 0.71 | 32.0% | 33.4% | 53.0% | 18.3% | 0.15 |
| Tigray | 85.0% | 76.8% | 77.5% | 73.5% | 5.39*** | 90.6% | 60.6% | 72.1% | 75.7% | 3.49*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adult women (20-49 years) | 44.6% | 55.4% | 56.4% | 55.5% |
| Adult men (20-59 years) | 50.0% | 57.6% | 73.8% | 64.7% |
| Significance of sex differences (two-tailed test) t value | -3.65*** | -3.91*** | -21.78*** | -7.56*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 34 Trends in exposure to family planning information, adolescents and adults, by wealth quintiles

| | Adolescent girls (15-19 years) | | | | Adolescent boys (15-19 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 35.1% | 40.1% | 31.4% | -0.32 | 24.5% | 49.6% | 27.2% | -1.19 |
| Poorer | 46.0% | 46.7% | 41.1% | -0.59 | 38.7% | 44.6% | 30.1% | 1.51 |
| Middle | 49.8% | 52.0% | 37.3% | 1.10 | 42.0% | 56.3% | 38.1% | 0.50 |
| Richer | 57.4% | 58.0% | 47.4% | 2.76** | 44.6% | 61.1% | 43.2% | 1.37 |
| Richest | 76.8% | 79.1% | 71.9% | 3.46*** | 64.2% | 80.2% | 67.2% | 3.36*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| | Adult women (20-49 years) | | | | Adult men (20-59 years) | | | |
|---|---|---|---|---|---|---|---|---|
| **Wealth quintiles** | **2005** | **2011** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** | **2005** | **2011** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** |
| Poorest | 38.8% | 43.8% | 38.4% | -4.05*** | 37.3% | 59.7% | 50.4% | -2.68** |
| Poorer | 48.1% | 48.6% | 46.0% | -0.66 | 49.4% | 66.5% | 56.9% | -2.55* |
| Middle | 52.2% | 47.2% | 47.6% | 0.17 | 57.4% | 71.3% | 60.8% | -2.38* |
| Richer | 55.4% | 53.6% | 54.5% | -1.25 | 61.9% | 76.6% | 69.1% | -1.67 |
| Richest | 76.9% | 80.1% | 80.6% | -0.80 | 77.5% | 89.0% | 79.3% | 0.53 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 35 Trends in pre-primary, primary, and secondary school attendance, by sex, area and region of residence

| **Pre-primary school attendance (age 5-6 years)** | | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
|---|---|---|---|---|---|---|
| National | Ethiopia | 3.6% | 4.3% | 13.3% | 28.8% | -34.23*** |
| Sex | Girls | 3.5% | 4.0% | 13.8% | 27.7% | |
| | Boys | 3.6% | 4.6% | 12.9% | 29.8% | |
| | Significance of sex differences (two-tailed test) t value | -0.25 | -0.10 | 2.70** | -0.29 | |
| Area of residence | Urban | 13.8% | 13.3% | 22.4% | 66.2% | -20.73*** |
| | Rural | 2.2% | 3.6% | 12.0% | 24.9% | -29.61*** |
| Region | Addis Ababa | 19.4% | 13.8% | 29.5% | 96.5% | -22.34*** |
| | Afar | 3.5% | 3.6% | 26.5% | 35.6% | -9.15*** |
| | Amhara | 3.7% | 6.2% | 14.4% | 28.2% | -11.52*** |
| | Benishangul-Gumuz | 4.4% | 7.3% | 15.8% | 26.7% | -6.54*** |
| | Dire Dawa | 7.1% | 7.4% | 21.3% | 55.4% | -12.88*** |
| | Gambela | 5.5% | 5.3% | 27.2% | 47.3% | -9.05*** |
| | Harari | 19.9% | 14.1% | 27.9% | 55.0% | -7.76*** |
| | Oromia | 3.1% | 4.2% | 11.2% | 22.5% | -11.13*** |
| | SNNPR | 2.5% | 2.5% | 10.5% | 34.7% | -14.70*** |
| | Somali | 0.0% | 2.9% | 23.8% | 18.0% | -8.26*** |
| | Tigray | 4.5% | 3.6% | 19.8% | 35.8% | -13.31*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Primary school attendance (age 7-9 years) | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 22.0% | 31.4% | 51.4% | 61.9% | -49.44*** |
| Sex | Girls | 20.7% | 31.6% | 49.8% | 61.8% | |
| | Boys | 23.2% | 31.2% | 52.9% | 61.9% | |
| | Significance of sex differences (two-tailed test) t value | -2.56* | 0.03 | -2.80** | 0.74 | |
| Area of residence | Urban | 70.7% | 72.0% | 79.1% | 87.1% | -9.45*** |
| | Rural | 16.2% | 27.9% | 47.3% | 59.2% | -52.51*** |
| Region | Addis Ababa | 78.7% | 75.9% | 87.9% | 97.2% | -6.40*** |
| | Afar | 20.0% | 14.6% | 51.4% | 62.4% | -12.69*** |
| | Amhara | 23.7% | 40.5% | 56.9% | 66.7% | -18.85*** |
| | Benishangul-Gumuz | 25.3% | 36.5% | 55.8% | 67.1% | -14.00*** |
| | Dire Dawa | 46.5% | 45.9% | 69.6% | 77.7% | -10.50*** |
| | Gambela | 42.7% | 29.7% | 69.8% | 81.8% | -12.72*** |
| | Harari | 55.7% | 49.1% | 71.3% | 77.2% | -6.30*** |
| | Oromia | 20.1% | 30.7% | 46.6% | 55.4% | -19.24*** |
| | SNNPR | 18.4% | 21.4% | 45.2% | 65.0% | -23.27*** |
| | Somali | 5.8% | 10.5% | 49.8% | 50.3% | -19.06*** |
| | Tigray | 22.3% | 44.3% | 72.4% | 76.2% | -26.69*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Primary school attendance (age 10-14 years) | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 42.1% | 56.9% | 74.3% | 79.0% | -50.53*** |
| Sex | Girls | 37.1% | 55.3% | 76.6% | 80.0% | |
| | Boys | 46.7% | 58.3% | 72.2% | 78.2% | |
| | Significance of sex differences (two-tailed test) t value | -8.41*** | -2.85*** | 0.25 | -0.50 | |
| Area of residence | Urban | 83.6% | 88.8% | 90.3% | 92.4% | -5.67*** |
| | Rural | 35.3% | 53.2% | 71.3% | 77.2% | -56.06*** |
| Region | Addis Ababa | 86.5% | 89.9% | 87.8% | 94.3% | -4.06*** |
| | Afar | 22.1% | 18.3% | 52.9% | 63.8% | -15.46*** |
| | Amhara | 39.7% | 60.8% | 76.2% | 82.4% | -23.87*** |
| | Benishangul-Gumuz | 50.3% | 63.6% | 80.2% | 84.5% | -14.24*** |
| | Dire Dawa | 61.4% | 69.1% | 81.2% | 79.6% | -8.15*** |
| | Gambela | 76.6% | 63.5% | 88.6% | 92.8% | -8.42*** |
| | Harari | 71.9% | 65.4% | 78.8% | 79.2% | -2.67** |
| | Oromia | 39.6% | 59.9% | 70.7% | 74.3% | -22.45*** |
| | SNNPR | 43.5% | 53.3% | 76.9% | 83.4% | -24.02*** |
| | Somali | 18.3% | 17.4% | 65.1% | 64.8% | -26.29*** |
| | Tigray | 45.0% | 57.7% | 77.5% | 85.6% | -24.06*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Secondary school attendance (age 15-17 years) | Adolescent girls | | | | | Adolescent boys | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 33.0% | 55.3% | 67.6% | 65.2% | -18.74*** | 46.6% | 70.4% | 66.1% | 70.1% | -14.84*** |
| Urban | 70.3% | 75.5% | 80.3% | 78.5% | -3.71*** | 86.6% | 88.9% | 85.1% | 84.0% | -1.28 |
| Rural | 22.8% | 50.3% | 63.7% | 61.1% | -21.17*** | 40.8% | 67.0% | 61.3% | 67.0% | -16.72*** |
| Addis Ababa | 65.5% | 68.6% | 73.4% | 72.2% | -1.02 | 80.8% | 88.8% | 75.9% | 85.9% | -1.13 |
| Afar | 24.2% | 26.8% | 35.3% | 41.5% | -4.32*** | 15.2% | 37.2% | 57.1% | 72.8% | -6.64*** |
| Amhara | 24.6% | 51.8% | 67.2% | 66.5% | -11.24*** | 28.7% | 63.7% | 59.4% | 60.6% | -6.21*** |
| Benishangul-Gumuz | 41.2% | 47.6% | 70.2% | 70.6% | -6.43*** | 73.9% | 64.2% | 73.6% | 78.0% | -2.90** |
| Dire Dawa | 48.4% | 60.9% | 72.1% | 64.6% | -3.07** | 73.4% | 86.4% | 80.3% | 84.2% | -3.12* |
| Gambela | 70.3% | 62.9% | 49.7% | 81.0% | -2.85** | 75.0% | 69.7% | 65.2% | 85.2% | -1.30 |
| Harari | 37.7% | 60.1% | 65.4% | 60.0% | -3.92*** | 48.1% | 73.0% | 81.6% | 79.2% | -2.82** |
| Oromia | 31.7% | 55.4% | 66.6% | 60.7% | -9.01*** | 48.4% | 73.5% | 65.9% | 71.8% | -6.30*** |
| SNNPR | 33.1% | 61.7% | 75.2% | 74.3% | -10.15*** | 50.0% | 75.9% | 75.8% | 73.7% | -4.30*** |
| Somali | 23.9% | 19.5% | 42.4% | 50.1% | -9.96*** | 30.9% | 39.5% | 71.9% | 74.1% | -14.33*** |
| Tigray | 44.2% | 55.8% | 63.1% | 61.3% | -4.22*** | 74.3% | 68.9% | 65.3% | 70.9% | -5.15*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Girls (15-17 years) | 33.0% | 55.3% | 67.6% | 65.2% |
| Boys (15-17 years) | 46.6% | 70.4% | 66.1% | 70.1% |
| Significance of sex differences (two-tailed test) t value | -9.12*** | -5.17*** | 2.35* | -2.29* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 36 Trends in pre-primary, primary, and secondary school attendance, by wealth quintiles

| | Preschool attendance (age 5-6 years) | | | | Primary school attendance (age 7-9 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 2.9% | 9.2% | 17.6% | -15.13*** | 19.2% | 39.7% | 47.6% | -27.70*** |
| Poorer | 3.2% | 11.6% | 21.3% | -13.71*** | 25.6% | 43.7% | 56.0% | -20.33*** |
| Middle | 4.0% | 13.2% | 25.1% | -13.03*** | 28.9% | 46.8% | 61.6% | -18.41*** |
| Richer | 3.9% | 11.9% | 33.7% | -14.69*** | 32.9% | 55.5% | 67.9% | -17.90*** |
| Richest | 8.6% | 24.4% | 59.8% | -27.21*** | 56.8% | 80.5% | 86.1% | -15.67*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| | Primary school attendance (age 10-14 years) | | | |
|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 34.4% | 61.1% | 62.1% | -29.28*** |
| Poorer | 49.0% | 69.1% | 74.8% | -20.12*** |
| Middle | 56.8% | 72.6% | 82.4% | -17.46*** |
| Richer | 64.3% | 80.2% | 85.2% | -14.63*** |
| Richest | 82.6% | 89.9% | 93.2% | -7.03*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| | Secondary school attendance, girls age 15-17 years | | | | Secondary school attendance, boys age 15-17 years | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 25.9% | 55.2% | 41.5% | -6.25*** | 49.8% | 56.3% | 62.6% | -10.18*** |
| Poorer | 41.9% | 59.3% | 47.5% | -3.40*** | 63.3% | 59.1% | 55.8% | -2.62** |
| Middle | 56.7% | 61.7% | 67.1% | -4.48*** | 72.6% | 62.2% | 67.9% | -1.31 |
| Richer | 57.5% | 75.6% | 74.6% | -5.59*** | 75.9% | 64.9% | 74.0% | -2.70** |
| Richest | 74.1% | 78.6% | 78.5% | -1.12 | 84.9% | 84.5% | 82.4% | -0.12 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 37 Trends in delay in schooling, by sex, age, area, and region of residence

| Percentage of children age 9-14 years attending the right grade for their age (with less than 2 years of delay) | | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|---|
| National | Ethiopia | 40.3% | 42.3% | 59.6% | 61.7% | -20.16*** |
| Sex | Girls | 40.3% | 35.2% | 59.8% | 63.3% | |
| | Boys | 37.5% | 42.4% | 59.4% | 60.3% | |
| | Significance of sex differences (two-tailed test) t value | 1.59 | -0.057 | 0.14 | 0.29 | |
| Area of residence | Urban | 76.8% | 77.3% | 81.2% | 84.2% | -3.59*** |
| | Rural | 22.5% | 35.2% | 54.4% | 58.1% | -29.28*** |
| Region | Addis Ababa | 86.0% | 79.9% | 86.8% | 89.5% | -2.12* |
| | Afar | 43.2% | 58.2% | 53.7% | 64.8% | -2.97** |
| | Amhara | 39.4% | 49.1% | 65.7% | 70.8% | -11.74*** |
| | Benishangul-Gumuz | 35.5% | 44.4% | 58.8% | 67.4% | -9.00*** |
| | Dire Dawa | 59.9% | 77.2% | 74.3% | 75.2% | -4.68*** |
| | Gambela | 46.0% | 41.1% | 62.3% | 72.4% | -8.41*** |
| | Harari | 70.6% | 73.3% | 80.0% | 74.9% | -2.86** |
| | Oromia | 32.6% | 35.9% | 54.8% | 53.5% | -9.11*** |
| | SNNPR | 32.2% | 29.5% | 52.2% | 57.8% | -11.10*** |
| | Somali | 49.2% | 45.2% | 42.0% | 59.9% | -2.66** |
| | Tigray | 45.1% | 56.7% | 79.6% | 81.6% | -16.90*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Percentage of children attending the right grade for their age (with less than 3 years of delay) | Adolescent girls (15-17 years) | | | | | Adolescent boys (15-17 years) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 38.1% | 36.3% | 55.7% | 65.6% | -10.50*** | 31.3% | 39.6% | 52.5% | 61.3% | -13.09*** |
| Urban | 74.4% | 70.5% | 81.7% | 84.3% | -3.19** | 82.6% | 75.5% | 82.2% | 91.6% | -5.56*** |
| Rural | 7.3% | 23.7% | 45.5% | 58.3% | -17.85*** | 15.6% | 30.9% | 42.2% | 52.7% | -17.48*** |
| Addis Ababa | 80.4% | 62.0% | 79.4% | 77.6% | 0.03 | 70.3% | 83.2% | 97.0% | 97.3% | -3.91** |
| Afar | 59.2% | 29.6% | 57.2% | 54.7% | -0.89 | 0% | 21.4% | 48.6% | 62.7% | -1.19 |
| Amhara | 38.6% | 48.0% | 62.7% | 69.0% | -3.41*** | 49.2% | 42.1% | 52.5% | 57.7% | -3.46*** |
| Benishangul-Gumuz | 25.0% | 46.5% | 50.2% | 74.2% | -6.89*** | 10.0% | 48.2% | 59.1% | 68.4% | -7.30*** |
| Dire Dawa | 71.3% | 72.4% | 78.7% | 84.8% | -2.18* | 80.0% | 65.2% | 81.2% | 86.0% | -2.75** |
| Gambela | 24.6% | 35.2% | 61.0% | 72.6% | -7.49*** | 37.8% | 48.1% | 72.6% | 76.3% | -6.20*** |
| Harari | 71.3% | 79.2% | 73.2% | 78.1% | -1.18 | 62.9% | 74.9% | 84.9% | 87.2% | -2.35* |
| Oromia | 37.8% | 29.7% | 49.2% | 64.3% | -5.38*** | 15.2% | 40.4% | 47.8% | 56.1% | -5.45*** |
| SNNPR | 15.4% | 23.1% | 44.0% | 54.7% | -6.45*** | 23.7% | 24.3% | 50.1% | 64.2% | -9.78*** |
| Somali | 7.4% | 47.8% | 40.5% | 58.6% | -2.04* | 52.3% | 45.3% | 51.5% | 71.5% | -2.37* |
| Tigray | 37.1% | 43.0% | 80.4% | 85.2% | -9.77*** | 47.3% | 42.6% | 55.7% | 66.3% | -5.77*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Girls (15-17 years) | 38.1% | 36.3% | 55.7% | 65.6% |
| Boys (15-17 years) | 31.3% | 39.6% | 52.5% | 61.3% |
| Significance of sex differences (two-tailed test) t value | 2.58* | -0.55 | 8.21*** | 8.21*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 38 Trends in delay in schooling, by age, sex and wealth quintiles

| Age 9-14 years | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 31.8% | 48.1% | 51.1% | -11.60*** |
| Poorer | 28.9% | 49.8% | 57.4% | -13.97*** |
| Middle | 33.1% | 53.0% | 57.8% | -14.72*** |
| Richer | 37.0% | 60.9% | 61.2% | -11.64*** |
| Richest | 66.2% | 81.3% | 79.9% | -6.28*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Age 15-17 years | Adolescent girls | | | | Adolescent boys | | | |
|---|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 19.0% | 40.8% | 38.1% | -4.69*** | 21.5% | 24.9% | 42.1% | 5.76*** |
| Poorer | 16.9% | 43.6% | 52.5% | -7.00*** | 13.9% | 32.3% | 54.1% | 6.91*** |
| Middle | 23.7% | 47.2% | 58.3% | -7.66*** | 30.2% | 45.2% | 48.2% | 5.87*** |
| Richer | 28.5% | 49.8% | 62.5% | -8.14*** | 36.2% | 53.8% | 52.8% | 6.55** |
| Richest | 56.1% | 79.6% | 83.2% | -8.06*** | 67.6% | 83.1% | 88.8% | 6.45*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 39 Trends in educational attainment among adolescents, by area and region of residence

| Age 15-19 years | Adolescent girls | | | | Adolescent boys | | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | 2000 | 2005 | 2011 | 2016 |
| Ethiopia | 3 | 5 | 5 | 5 | 3 | 5 | 5 | 5 |
| Urban | 3 | 7 | 7 | 6 | 3 | 8 | 7 | 7 |
| Rural | 2 | 4 | 5 | 5 | 2 | 4 | 5 | 5 |
| Addis Ababa | 3 | 5 | 6 | 6 | 4 | 8 | 7 | 6 |
| Afar | 3 | 5 | 5 | 5 | 3 | 4 | 6 | 7 |
| Amhara | 3 | 5 | 6 | 6 | 3 | 5 | 5 | 5 |
| Benishangul-Gumuz | 2 | 4 | 5 | 5 | 3 | 5 | 6 | 5 |
| Dire Dawa | 3 | 5 | 5 | 6 | 4 | 7 | 6 | 6 |
| Gambela | 3 | 5 | 5 | 5 | 4 | 6 | 6 | 5 |
| Harari | 3 | 4 | 5 | 5 | 3 | 7 | 7 | 6 |
| Oromia | 3 | 5 | 5 | 5 | 2 | 5 | 5 | 5 |
| SNNPR | 3 | 6 | 6 | 5 | 3 | 5 | 5 | 5 |
| Somali | 4 | 7 | 7 | 6 | 4 | 6 | 5 | 6 |
| Tigray | 3 | 7 | 6 | 6 | 3 | 6 | 5 | 5 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 40 Trends in educational attainment of adult women and men, by area and region of residence, and wealth quintiles

| Percentage of women (20-49 years) that have completed secondary or higher education | | | | | |
|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 7.8% | 10.2% | 10.3% | 15.1% | -13.64*** |
| Urban | 37.6% | 51.6% | 34.2% | 49.0% | -2.95** |
| Rural | 1.7% | 2.2% | 3.1% | 5.8% | -16.01*** |
| Addis Ababa | 52.9% | 61.5% | 45.0% | 57.5% | -2.87** |
| Afar | 4.7% | 6.7% | 6.5% | 6.6% | -1.39 |
| Amhara | 4.5% | 5.9% | 7.7% | 14.4% | -7.99*** |
| Benishangul-Gumuz | 3.8% | 4.6% | 7.6% | 13.3% | -6.70*** |
| Dire Dawa | 33.6% | 32.4% | 25.0% | 27.9% | -0.22 |
| Gambela | 10.1% | 6.5% | 14.7% | 34.0% | -12.31*** |
| Harari | 30.2% | 42.9% | 31.3% | 29.0% | 0.0013 |
| Oromia | 6.5% | 8.6% | 8.0% | 10.3% | -4.60*** |
| SNNPR | 5.7% | 5.4% | 8.3% | 12.6% | 7.56*** |
| Somali | 3.9% | 5.2% | 5.2% | 4.9% | -2.73** |
| Tigray | 4.9% | 14.6% | 11.1% | 19.0% | -11.07*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adult women (20-49 years) | 7.8% | 10.2% | 10.3% | 15.1% |
| Adult men (20-59 years) | 15.1% | 18.0% | 16.7% | 23.4% |
| Significance of sex differences (two-tailed test) t value | -10.01*** | -11.48*** | -16.24*** | -17.65*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Percentage of women (20-59 years) that have completed secondary or higher education | | | | |
|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Poorest | 0.7% | 0.4% | 1.7% | -6.62*** |
| Poorer | 0.7% | 1.1% | 3.0% | -5.76*** |
| Middle | 1.4% | 2.2% | 4.9% | -6.88*** |
| Richer | 2.7% | 3.9% | 10.1% | -10.16*** |
| Richest | 38.8% | 35.0% | 44.3% | 0.56 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Percentage of men (20-59 years) that have completed secondary or higher education | | | | | |
|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 15.1% | 18.0% | 16.7% | 23.4% | -7.31*** |
| Urban | 60.9% | 71.8% | 48.9% | 65.8% | -0.59 |
| Rural | 7.8% | 8.9% | 7.6% | 13.0% | -7.08*** |
| Addis Ababa | 74.9% | 72.5% | 55.7% | 72.1% | 0.72 |
| Afar | 15.5% | 13.3% | 16.4% | 17.8% | -1.72 |
| Amhara | 6.6% | 9.3% | 9.8% | 18.7% | -4.63*** |
| Benishangul-Gumuz | 13.0% | 8.7% | 11.7% | 25.4% | -4.18*** |
| Dire Dawa | 50.1% | 49.8% | 43.9% | 47.4% | -0.70 |
| Gambela | 29.9% | 28.4% | 33.9% | 46.6% | -3.65*** |
| Harari | 35.3% | 47.8% | 43.9% | 48.3% | -2.02* |
| Oromia | 12.3% | 19.7% | 15.0% | 20.5% | -3.38*** |
| SNNPR | 19.9% | 13.3% | 17.1% | 21.5% | -0.91 |
| Somali | 8.7% | 5.9% | 15.7% | 19.2% | -4.29*** |
| Tigray | 10.6% | 19.5% | 17.0% | 22.7% | 3.97*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Percentage of men (20-59 years) that have completed secondary or higher education | | | | |
|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Poorest | 2.9% | 2.1% | 5.3% | -5.65*** |
| Poorer | 4.4% | 3.3% | 6.9% | -4.33*** |
| Middle | 7.7% | 4.0% | 11.4% | -3.88*** |
| Richer | 13.2% | 13.5% | 20.5% | -5.37*** |
| Richest | 54.3% | 50.4% | 59.1% | -1.22 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

# Annex 41 Trends in illiteracy, adolescents and adults, by sex, area and region of residence

| Adolescent girls | | | | | |
|---|---|---|---|---|---|
| **Age 15-19 years** | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 72.2% | 60.0% | 47.6% | 52.3% | 11.03*** |
| Urban | 28.9% | 28.2% | 20.0% | 23.9% | -0.33 |
| Rural | 84.6% | 69.0% | 57.3% | 61.6% | 15.32*** |
| Addis Ababa | 28.9% | 29.8% | 24.1% | 22.3% | 1.46 |
| Afar | 71.8% | 82.8% | 75.2% | 78.5% | -0.49 |
| Amhara | 73.8% | 57.2% | 38.2% | 32.5% | 13.01*** |
| Benishangul-Gumuz | 70.5% | 65.9% | 54.8% | 58.7% | 2.82** |
| Dire Dawa | 41.0% | 39.9% | 40.4% | 47.8% | -0.54 |
| Gambela | 63.3% | 69.7% | 51.3% | 53.3% | 2.28* |
| Harari | 61.9% | 44.9% | 46.2% | 47.1% | 2.89** |
| Oromia | 77.7% | 63.6% | 53.1% | 57.4% | 8.96*** |
| SNNPR | 73.8% | 65.3% | 61.5% | 75.5% | 0.16 |
| Somali | 86.9% | 89.8% | 74.0% | 80.3% | 4.11*** |
| Tigray | 62.7% | 51.7% | 32.2% | 37.1% | 8.58*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adolescent boys | | | | | |
|---|---|---|---|---|---|
| **Age 15-19 years** | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 60.2% | 40.7% | 40.4% | 36.6% | 6.71*** |
| Urban | 6.3% | 8.4% | 12.6% | 13.2% | -1.54 |
| Rural | 69.9% | 47.2% | 48.1% | 42.2% | 8.42*** |
| Addis Ababa | 14.7% | 4.9% | 9.7% | 7.0% | 1.53 |
| Afar | 75.5% | 80.9% | 52.0% | 58.0% | 0.94 |
| Amhara | 64.6% | 42.1% | 39.5% | 29.1% | 6.23*** |
| Benishangul-Gumuz | 49.7% | 36.6% | 39.3% | 36.1% | 0.83 |
| Dire Dawa | 15.3% | 24.4% | 16.1% | 26.2% | -1.00 |
| Gambela | 32.9% | 36.3% | 37.6% | 37.1% | -0.40 |
| Harari | 42.9% | 14.1% | 20.8% | 20.9% | 2.51* |
| Oromia | 70.0% | 41.2% | 44.5% | 33.7% | 6.98*** |
| SNNPR | 54.3% | 41.9% | 42.3% | 59.4% | -0.83 |
| Somali | 68.9% | 72.8% | 37.6% | 37.2% | 3.84*** |
| Tigray | 34.1% | 33.0% | 37.5% | 28.0% | 2.65** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adolescents girls (15-19 years) | 72.2% | 60.0% | 47.6% | 52.3% |
| Adolescent boys (15-19 years) | 60.2% | 40.7% | 40.4% | 36.6% |
| Significance of sex differences (two-tailed test) t value | 6.62*** | 11.78*** | 8.97*** | 12.90*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult women | | | | | |
|---|---|---|---|---|---|
| **Age 20-49 years** | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 84.4% | 83.8% | 79.4% | 78.3% | 7.95*** |
| Urban | 47.1% | 37.0% | 45.5% | 39.9% | -1.53 |
| Rural | 92.0% | 93.0% | 89.7% | 88.8% | 7.78*** |
| Addis Ababa | 33.0% | 28.2% | 31.9% | 25.2% | 4.44*** |
| Afar | 91.0% | 90.0% | 88.1% | 86.9% | 1.77 |
| Amhara | 87.0% | 89.3% | 82.8% | 76.0% | 6.71*** |
| Benishangul-Gumuz | 87.1% | 89.0% | 84.8% | 82.5% | 2.41* |
| Dire Dawa | 51.8% | 60.8% | 62.7% | 64.9% | -2.66** |
| Gambela | 82.3% | 89.2% | 70.6% | 70.5% | 5.66*** |
| Harari | 61.4% | 52.0% | 55.5% | 66.9% | -1.76 |
| Oromia | 87.2% | 84.2% | 82.8% | 83.6% | 4.04*** |
| SNNPR | 85.4% | 89.0% | 82.4% | 86.2% | -0.17 |
| Somali | 92.7% | 93.9% | 90.4% | 94.8% | 0.19 |
| Tigray | 89.2% | 81.2% | 75.1% | 70.6% | 12.79*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Adult men | | | | | |
|---|---|---|---|---|---|
| **Age 20-59 years** | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 60.4% | 58.2% | 54.9% | 53.3% | 5.90*** |
| Urban | 21.0% | 13.5% | 20.9% | 15.3% | -0.45 |
| Rural | 66.7% | 66.1% | 64.7% | 62.7% | 4.89*** |
| Addis Ababa | 11.2% | 11.3% | 11.6% | 9.6% | 0.41 |
| Afar | 77.5% | 79.5% | 67.2% | 75.1% | 1.36 |
| Amhara | 69.2% | 62.2% | 58.8% | 55.3% | 3.44*** |
| Benishangul-Gumuz | 58.7% | 66.5% | 59.7% | 55.1% | 1.03 |
| Dire Dawa | 29.3% | 37.3% | 27.9% | 35.3% | -0.10 |
| Gambela | 36.8% | 55.9% | 34.8% | 32.9% | 0.82 |
| Harari | 45.9% | 29.0% | 35.2% | 32.2% | 2.47* |
| Oromia | 66.5% | 61.7% | 60.9% | 55.9% | 3.97*** |
| SNNPR | 45.9% | 56.3% | 51.4% | 60.1% | -3.68*** |
| Somali | 86.2% | 86.7% | 61.4% | 60.2% | 6.90*** |
| Tigray | 60.6% | 49.9% | 50.1% | 43.0% | 4.77*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Adult women (20-49 years) | 84.4% | 83.8% | 79.4% | 78.3% |
| Adult men (20-59 years) | 60.4% | 58.2% | 54.9% | 53.3% |
| Significance of sex differences (two-tailed test) t value | 21.60*** | 29.47*** | 40.4*** | 40.06*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 42 Trends in illiteracy, adolescents and adults, by sex and wealth quintiles

| | Adolescent girls (15-19 years) | | | | Adolescent boys (15-19 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 83.3% | 64.3% | 77.8% | 0.98 | 64.5% | 61.2% | 56.3% | 2.02* |
| Poorer | 76.3% | 62.3% | 71.2% | 2.10* | 54.6% | 54.0% | 48.1% | 1.55 |
| Middle | 68.5% | 59.4% | 59.1% | 4.58*** | 40.6% | 45.8% | 37.6% | 1.64 |
| Richer | 60.1% | 43.9% | 50.2% | 3.68*** | 38.0% | 35.1% | 35.2% | 0.70 |
| Richest | 35.6% | 22.2% | 27.2% | 1.43 | 18.1% | 17.0% | 18.0% | -1.73 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| | Adult women (20-49 years) | | | | Adult men (20-59 years) | | | |
|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 98.3% | 95.9% | 95.8% | 5.39*** | 83.6% | 77.5% | 76.1% | 6.34*** |
| Poorer | 97.1% | 93.7% | 91.6% | 6.13*** | 76.8% | 70.5% | 71.3% | 3.68*** |
| Middle | 93.9% | 91.1% | 89.7% | 4.86*** | 63.9% | 65.7% | 62.8% | 1.83 |
| Richer | 89.1% | 84.6% | 83.9% | 5.22*** | 50.8% | 53.1% | 51.8% | 1.00 |
| Richest | 49.2% | 44.6% | 44.0% | -0.03 | 24.4% | 20.2% | 19.4% | 2.16* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 43 Trends in incidence of child marriage among girls age 15-17 years, by area and region of residence

| Adolescent girl is married/formerly married | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| Ethiopia | 19.8% | 16.6% | 9.9% | 11.3% | 5.21*** |
| Urban | 4.7% | 4.2% | 2.7% | 3.9% | 2.55* |
| Rural | 23.9% | 19.6% | 12.1% | 13.4% | 4.78*** |
| Addis Ababa | 4.8% | 4.1% | 2.2% | 1.1% | 2.95** |
| Afar | 23.3% | 34.7% | 24.5% | 29.3% | -0.98 |
| Amhara | 48.7% | 32.2% | 13.8% | 16.4% | 7.40*** |
| Benishangul-Gumuz | 18.8% | 25.9% | 15.5% | 13.6% | 1.40 |
| Dire Dawa | 7.4% | 6.7% | 5.7% | 4.7% | 0.91 |
| Gambela | 18.4% | 23.6% | 21.0% | 18.6% | 0.24 |
| Harari | 13.6% | 12.9% | 13.7% | 9.5% | 1.27 |
| Oromia | 12.9% | 13.4% | 10.6% | 14.3% | 0.15 |
| SNNPR | 7.2% | 4.3% | 1.6% | 2.7% | 2.49* |
| Somali | 4.5% | 11.4% | 8.3% | 12.0% | -0.89 |
| Tigray | 23.6% | 22.7% | 13.0% | 12.0% | 4.37*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 44 Trends in incidence of child marriage, girls age 15-17 years, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 21.4% | 15.2% | 27.0% | 1.76 |
| Poorer | 22.9% | 12.0% | 15.1% | 3.19** |
| Middle | 22.1% | 15.2% | 11.3% | 4.28*** |
| Richer | 18.5% | 7.5% | 7.2% | 3.60*** |
| Richest | 5.8% | 3.2% | 4.2% | 1.83 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 45 Trends in age at the first sexual intercourse, adolescents and adults, by area and region of residence

| Percentage that had the first sexual intercourse under the age of 18 years | Adolescent girls (15-19 years) | | | | Adult women (20-49 years) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2011 | 2016 | 2000 | 2005 | 2011 | 2016 |
| Ethiopia | 96.6% | 97.2% | 81.5% | 88.5% | 74.9% | 72.6% | 66.2% | 64.8% |
| Urban | 97.7% | 97.3% | 77.2% | 83.4% | 70.5% | 66.8% | 55.7% | 50.0% |
| Rural | 96.3% | 97.2% | 82.4% | 89.4% | 75.8% | 73.8% | 69.0% | 68.4% |
| Addis Ababa | 98.6% | 97.6% | 74.4% | 69.5% | 67.5% | 63.8% | 43.3% | 36.6% |
| Afar | 94.4% | 97.0% | 89.0% | 93.6% | 87.6% | 68.0% | 64.5% | 73.6% |
| Amhara | 98.3% | 97.1% | 86.3% | 90.3% | 91.0% | 88.9% | 82.0% | 77.1% |
| Benishangul-Gumuz | 98.2% | 93.8% | 91.8% | 86.7% | 77.7% | 80.1% | 71.1% | 67.9% |
| Dire Dawa | 98.5% | 98.2% | 75.5% | 82.1% | 51.8% | 63.3% | 45.2% | 54.9% |
| Gambela | 99.2% | 96.2% | 79.7% | 94.7% | 75.1% | 80.2% | 66.2% | 66.3% |
| Harari | 97.9% | 95.3% | 74.5% | 90.8% | 69.5% | 57.8% | 58.1% | 55.2% |
| Oromia | 95.7% | 96.8% | 81.9% | 88.3% | 71.9% | 68.0% | 62.5% | 65.3% |
| SNNPR | 96.1% | 98.2% | 62.2% | 90.3% | 60.5% | 64.7% | 55.3% | 55.9% |
| Somali | 96.8% | 99.1% | 80.5% | 92.3% | 63.4% | 55.7% | 58.3% | 54.3% |
| Tigray | 96.3% | 96.1% | 84.5% | 85.5% | 83.4% | 80.1% | 73.6% | 68.5% |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 46 Trends in teenage pregnancy, adolescent girls age 15-19 years, by area and region of residence

| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
|---|---|---|---|---|---|
| Ethiopia | 15.8% | 16.6% | 12.4% | 13.3% | 1.85 |
| Urban | 9.3% | 7.1% | 4.6% | 5.4% | 2.21* |
| Rural | 17.7% | 19.2% | 15.1% | 15.8% | 0.77 |
| Addis Ababa | 4.7% | 3.8% | 4.5% | 3.0% | 1.41 |
| Afar | 21.2% | 19.5% | 14.3% | 23.4% | -0.48 |
| Amhara | 24.2% | 20.0% | 10.5% | 9.3% | 5.58*** |
| Benishangul-Gumuz | 20.9% | 27.2% | 19.5% | 16.0% | 2.87** |
| Dire Dawa | 10.6% | 13.3% | 6.0% | 13.4% | -0.08 |
| Gambela | 24.7% | 36.0% | 17.8% | 18.8% | 1.13 |
| Harari | 12.5% | 23.2% | 14.6% | 19.3% | -1.43 |
| Oromia | 15.5% | 18.9% | 16.0% | 18.4% | -0.75 |
| SNNPR | 7.8% | 11.0% | 9.1% | 9.8% | -0.80 |
| Somali | 12.6% | 19.2% | 17.7% | 19.1% | -2.47* |
| Tigray | 20.7% | 15.5% | 11.2% | 12.4% | 3.59*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 47 Trends in teenage pregnancy, adolescent girls age 15-19 years, by wealth quintiles

| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Poorest | 22.8% | 20.2% | 24.3% | 1.21 |
| Poorer | 20.6% | 14.1% | 18.7% | 1.15 |
| Middle | 20.2% | 17.1% | 16.4% | 2.04* |
| Richer | 18.0% | 8.9% | 8.9% | 4.49*** |
| Richest | 8.5% | 6.0% | 5.9% | 1.98* |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 48 Incidence of FGM among children, adolescents and adults, by area and region of residence

| | Children (0-14 years) | | Adolescent girls (15-19 years) | | | | Adult women (20-49 years) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2011 | 2016 | 2000 | 2005 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 24.4% | 23.7% | 70.8% | 64.7% | 52.4% | 9.70*** | 82.8% | 80.0% | 75.4% | 11.01*** |
| Urban | 17.1% | 12.8% | 68.7% | 61.4% | 42.6% | 10.74*** | 84.9% | 77.0% | 59.5% | 20.00*** |
| Rural | 25.4% | 25.5% | 71.4% | 65.6% | 55.6% | 3.96*** | 82.4% | 80.5% | 80.0% | -0.33 |
| Addis Ababa | 12.9% | 4.7% | 66.3% | 54.9% | 39.2% | 6.52*** | 85.1% | 76.9% | 58.7% | 14.45*** |
| Afar | 61.4% | 63.9% | 97.3% | 94.2% | 86.9% | 3.20** | 98.8% | 93.1% | 92.7% | 4.11*** |
| Amhara | 48.7% | 39.8% | 74.2% | 63.1% | 53.1% | 4.79*** | 81.6% | 75.3% | 69.8% | 5.17*** |
| Benishangul-Gumuz | 24.4% | 19.6% | 70.0% | 65.5% | 46.5% | 4.86*** | 76.1% | 69.9% | 74.7% | 0.50 |
| Dire Dawa | 14.5% | 12.7% | 89.9% | 84.0% | 64.9% | 7.19*** | 96.4% | 95.2% | 81.2% | 9.31*** |
| Gambela | 8.0% | 4.8% | 37.1% | 19.9% | 32.5% | -0.38 | 44.9% | 28.5% | 50.1% | -1.60 |
| Harari | 15.1% | 6.6% | 86.1% | 74.3% | 60.0% | 4.76*** | 96.5% | 90.4% | 87.1% | 6.52*** |
| Oromia | 18.6% | 16.9% | 78.1% | 75.7% | 51.5% | 7.71*** | 94.3% | 91.6% | 86.3% | 6.39*** |
| SNNPR | 10.6% | 18.4% | 63.6% | 54.9% | 57.6% | 1.42 | 75.6% | 75.9% | 75.5% | 0.55 |
| Somali | 32.4% | 36.6% | 100.0% | 95.8% | 95.8% | 2.88** | 99.8% | 97.5% | 99.4% | 1.07 |
| Tigray | 22.9% | 14.4% | 23.5% | 27.8% | 23.8% | -0.10 | 39.6% | 33.9% | 29.6% | 3.74*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 49 Incidence of FGM among adolescents and adults, by wealth quintiles

| | Adolescent girls (age 15-19 years) | | | Adult women (age 20-49 years) | | |
|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 60.2% | 72.6% | 3.53*** | 77.9% | 76.4% | 10.41*** |
| Poorer | 66.1% | 49.7% | 3.45*** | 81.5% | 79.5% | 9.56*** |
| Middle | 64.0% | 56.3% | 3.30** | 81.0% | 83.1% | 9.54*** |
| Richer | 69.1% | 53.3% | 4.58*** | 81.6% | 79.1% | 9.81*** |
| Richest | 63.5% | 42.8% | -0.22 | 78.3% | 63.6% | 4.32*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

# Annex 50 Trends in attitudes toward FGM among adolescents and adults, by sex, area and region of residence

| Percentage that think that FGM should be continued, that don't know, or that think that it depends | Adolescent girls (15-19 years) | | | | Adult women (20-49 years) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 64.5% | 27.7% | 16.7% | 23.09*** | 72.9% | 39.8% | 23.0% | 52.48*** |
| Urban | 31.7% | 12.8% | 7.6% | 6.47*** | 37.8% | 12.4% | 9.8% | 16.88*** |
| Rural | 74.6% | 32.1% | 19.6% | 26.46*** | 80.6% | 45.6% | 26.6% | 55.30*** |
| Addis Ababa | 22.3% | 7.5% | 5.2% | 5.15*** | 19.7% | 7.3% | 5.3% | 9.44*** |
| Afar | 71.1% | 70.9% | 52.5% | 2.49* | 79.8% | 69.8% | 57.0% | 7.08*** |
| Amhara | 74.0% | 31.9% | 15.1% | 15.20*** | 76.6% | 50.2% | 26.4% | 25.26*** |
| Benishangul-Gumuz | 57.5% | 37.7% | 11.2% | 9.25*** | 69.8% | 48.8% | 12.2% | 22.65*** |
| Dire Dawa | 39.1% | 14.0% | 27.3% | 2.02* | 47.3% | 16.1% | 26.6% | 7.74*** |
| Gambela | 39.7% | 19.6% | 17.1% | 4.21*** | 54.0% | 27.8% | 17.8% | 11.60*** |
| Harari | 56.5% | 30.0% | 20.7% | 5.62*** | 56.3% | 30.6% | 18.7% | 12.88*** |
| Oromia | 66.9% | 27.3% | 16.5% | 14.54*** | 77.4% | 39.3% | 24.7% | 30.19*** |
| SNNPR | 66.9% | 22.4% | 13.9% | 14.47*** | 76.3% | 29.7% | 18.1% | 32.04*** |
| Somali | 76.1% | 76.7% | 49.8% | 4.87*** | 78.4% | 77.3% | 53.3% | 8.31*** |
| Tigray | 39.1% | 23.9% | 20.6% | 4.88*** | 56.0% | 34.9% | 17.2% | 17.41*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Percentage that think that FGM should be continued, that don't know, or that think that it depends | Adolescent boys (15-19 years) | Adult men (20-59 years) |
|---|---|---|
| | 2016 | 2016 |
| Ethiopia | 13.1% | 13.8% |
| Urban | 8.9% | 6.5% |
| Rural | 14.2% | 15.6% |
| Addis Ababa | 0.8% | 4.8% |
| Afar | 34.7% | 40.5% |
| Amhara | 18.9% | 22.7% |
| Benishangul-Gumuz | 18.1% | 12.1% |
| Dire Dawa | 19.8% | 21.5% |
| Gambela | 3.9% | 8.7% |
| Harari | 23.7% | 25.8% |
| Oromia | 9.7% | 10.3% |
| SNNPR | 8.1% | 6.1% |
| Somali | 34.3% | 36.0% |
| Tigray | 18.9% | 18.7% |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 51 Trends in attitudes toward FGM among adolescent girls and women (15-49 years) and boys and men (15-59 years), by wealth quintiles

| | Women (15-49 years) | | | Men (15-59 years) |
|---|---|---|---|---|
| **Wealth quintiles** | **2005** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** | **2016** |
| Poorest | 56.7% | 38.5% | 10.93*** | 23.0% |
| Poorer | 45.7% | 26.3% | 10.12*** | 17.3% |
| Middle | 40.8% | 21.5% | 10.02*** | 15.0% |
| Richer | 36.3% | 18.5% | 10.72*** | 11.2% |
| Richest | 16.6% | 10.0% | 3.64*** | 6.5% |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 52 Incidence of GBV among adolescent girls and adult women, by area and region of residence, 2016

| **Ethiopia** | **Adolescent girls (15-19 years)** | **Adult women (20-49 years)** |
|---|---|---|
| | **35%** | **35%** |
| Urban | 47% | 31% |
| Rural | 33% | 36% |
| Addis Ababa | 55.5% | 32.1% |
| Afar | 17.7% | 22.3% |
| Amhara | 45.2% | 34.3% |
| Benishangul-Gumuz | 22.0% | 35.3% |
| Dire Dawa | 21.5% | 33.6% |
| Gambela | 25.6% | 38.6% |
| Harari | 44.5% | 39.4% |
| Oromia | 37.4% | 39.4% |
| SNNPR | 18.2% | 30.9% |
| Somali | 3.6% | 9.5% |
| Tigray | 29.4% | 35.4% |

Source: Authors' calculations using EDHS data.

## Annex 53 Incidence of GBV among adolescent girls and adult women, by wealth quintiles, 2016

| **Wealth quintiles** | **Adolescent girls (15-19 years)** | **Adult women (20-49 years)** |
|---|---|---|
| Poorest | 26.4% | 37.7% |
| Poorer | 33.6% | 35.9% |
| Middle | 40.7% | 36.7% |
| Richer | 34.8% | 35.2% |
| Richest | 41.0% | 28.7% |

# Annex 54 Trends in attitudes toward GBV, by sex and wealth quintiles

| Wife-beating is justified if the woman goes out without telling her husband/partner | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 57.8% | 65.2% | 44.1% | 44.5% | 25.66*** | 52.1% | 38.3% | 25.9% | 18.0% | 32.01*** |
| Urban | 38.7% | 41.9% | 24.9% | 24.3% | 12.91*** | 21.8% | 17.7% | 10.8% | 7.6% | 9.91*** |
| Rural | 62.0% | 70.1% | 50.2% | 50.2% | 20.64*** | 57.1% | 41.9% | 30.1% | 20.5% | 30.08*** |
| Addis Ababa | 23.8% | 24.3% | 11.9% | 10.3% | 11.86*** | 12.5% | 9.3% | 4.5% | 2.8% | 6.90*** |
| Afar | 71.3% | 66.6% | 55.5% | 53.1% | 7.37*** | 52.0% | 53.5% | 30.5% | 8.1% | 16.10*** |
| Amhara | 62.5% | 76.1% | 42.7% | 39.2% | 14.34*** | 44.2% | 40.5% | 29.7% | 25.8% | 6.84*** |
| Benishangul-Gumuz | 60.6% | 63.1% | 40.0% | 36.8% | 10.78*** | 40.2% | 41.5% | 31.4% | 19.5% | 4.31*** |
| Dire Dawa | 43.9% | 36.1% | 32.7% | 26.9% | 10.55*** | 23.6% | 29.3% | 14.1% | 9.1% | 5.73*** |
| Gambela | 53.6% | 54.1% | 45.0% | 40.0% | 6.08*** | 44.2% | 38.3% | 21.0% | 20.6% | 5.42*** |
| Harari | 19.0% | 48.7% | 36.2% | 33.2% | -6.75*** | 13.9% | 26.8% | 18.4% | 15.7% | -0.96 |
| Oromia | 56.7% | 65.7% | 43.6% | 54.3% | 1.74 | 61.8% | 43.0% | 20.8% | 18.3% | 20.08*** |
| SNNPR | 61.4% | 62.4% | 56.1% | 46.7% | 9.27*** | 52.4% | 40.0% | 36.0% | 11.9% | 18.93*** |
| Somali | 66.2% | 72.1% | 61.4% | 32.2% | 14.95*** | 51.3% | 25.5% | 33.1% | 11.7% | 14.09*** |
| Tigray | 56.1% | 62.8% | 37.5% | 39.2% | 9.60*** | 50.8% | 21.7% | 27.3% | 20.3% | 10.39*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Women (15-49 years) | 57.8% | 65.2% | 44.1% | 44.5% |
| Men (15-59 years) | 52.1% | 38.3% | 25.9% | 18.0% |
| Significance of sex differences (two-tailed test) t value | 8.33*** | 31.22*** | 31.48*** | 41.85*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman goes out without telling her husband/partner | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 72.3% | 55.5% | 52.3% | 17.70*** | Poorest | 42.0% | 37.0% | 22.2% | 17.07*** |
| Poorer | 73.2% | 52.4% | 56.0% | 13.90*** | Poorer | 46.3% | 33.7% | 21.7% | 12.76*** |
| Middle | 70.1% | 49.5% | 49.9% | 14.20*** | Middle | 41.1% | 30.1% | 21.8% | 10.76*** |
| Richer | 70.3% | 45.2% | 44.2% | 17.33*** | Richer | 41.7% | 22.1% | 18.5% | 12.89*** |
| Richest | 46.9% | 25.4% | 27.0% | 19.73*** | Richest | 23.8% | 11.9% | 9.1% | 12.93*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman neglects the children | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 66.0% | 65.6% | 52.5% | 48.4% | 34.18*** | 56.6% | 35.9% | 30.4% | 20.0% | 34.22*** |
| Urban | 52.0% | 44.5% | 35.0% | 29.6% | 22.92*** | 27.3% | 13.7% | 14.1% | 11.0% | 12.23*** |
| Rural | 69.1% | 70.1% | 58.1% | 53.7% | 24.65*** | 61.4% | 39.8% | 35.0% | 22.2% | 31.59*** |
| Addis Ababa | 40.3% | 30.6% | 17.2% | 16.1% | 17.19*** | 16.1% | 9.9% | 6.3% | 4.3% | 7.41*** |
| Afar | 76.0% | 66.4% | 53.9% | 54.1% | 9.71*** | 57.5% | 49.1% | 30.4% | 9.4% | 16.28*** |
| Amhara | 67.6% | 76.9% | 55.6% | 47.5% | 12.45*** | 48.0% | 36.2% | 34.0% | 33.5% | 4.92*** |
| Benishangul-Gumuz | 70.2% | 62.3% | 47.0% | 43.9% | 11.65*** | 48.0% | 43.6% | 37.7% | 20.7% | 7.14*** |
| Dire Dawa | 55.5% | 37.0% | 34.7% | 28.7% | 15.34*** | 34.6% | 28.9% | 15.6% | 6.8% | 11.38*** |
| Gambela | 57.4% | 57.1% | 51.1% | 43.4% | 5.62*** | 41.9% | 26.0% | 26.3% | 25.3% | 4.81*** |
| Harari | 30.3% | 57.4% | 46.1% | 30.8% | -0.08 | 18.6% | 16.6% | 23.5% | 17.7% | -0.20 |
| Oromia | 62.7% | 63.9% | 49.0% | 52.2% | 7.32*** | 67.5% | 38.0% | 25.3% | 17.4% | 23.75*** |
| SNNPR | 74.7% | 65.2% | 63.3% | 53.0% | 14.59*** | 54.8% | 40.5% | 40.7% | 12.2% | 20.09*** |
| Somali | 67.1% | 71.0% | 67.8% | 29.7% | 15.55*** | 53.7% | 38.8% | 39.6% | 12.1% | 13.70*** |
| Tigray | 68.9% | 61.7% | 54.0% | 54.0% | 8.47*** | 57.2% | 24.0% | 34.2% | 23.7% | 10.10*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Women (15-49 years) | 66.0% | 65.6% | 52.5% | 48.4% |
| Men (15-59 years) | 56.6% | 35.9% | 30.4% | 20.0% |
| Significance of sex differences (two-tailed test) t value | 12.30*** | 36.29*** | 36.08*** | 44.89*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman neglects the children | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 70.6% | 64.5% | 54.4% | 14.48*** | Poorest | 46.3% | 41.3% | 23.1% | 15.70*** |
| Poorer | 70.9% | 60.0% | 58.7% | 9.16*** | Poorer | 45.3% | 39.3% | 24.8% | 9.84*** |
| Middle | 70.7% | 57.1% | 54.7% | 11.60*** | Middle | 37.6% | 33.9% | 23.1% | 8.58*** |
| Richer | 70.1% | 53.0% | 48.9% | 14.22*** | Richer | 34.4% | 28.5% | 20.4% | 8.01*** |
| Richest | 50.9% | 35.2% | 32.6% | 20.25*** | Richest | 20.2% | 14.7% | 11.7% | 9.12*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman argues with her husband/partner | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 63.3% | 60.3% | 46.2% | 43.1% | 32.99*** | 48.1% | 33.2% | 26.3% | 17.1% | 28.90*** |
| Urban | 40.8% | 35.6% | 26.2% | 21.9% | 18.13*** | 16.2% | 12.6% | 10.2% | 6.8% | 6.74*** |
| Rural | 68.3% | 65.5% | 52.6% | 49.2% | 26.43*** | 53.3% | 36.8% | 30.8% | 19.6% | 27.89*** |
| Addis Ababa | 22.2% | 19.8% | 10.9% | 8.7% | 12.44*** | 10.7% | 5.7% | 4.5% | 2.8% | 5.90*** |
| Afar | 72.2% | 61.0% | 59.9% | 50.1% | 9.63*** | 52.1% | 45.6% | 29.8% | 9.5% | 14.99*** |
| Amhara | 70.8% | 68.6% | 48.8% | 42.4% | 17.55*** | 40.3% | 32.0% | 27.3% | 25.7% | 5.48*** |
| Benishangul-Gumuz | 62.8% | 58.6% | 40.5% | 35.5% | 11.53*** | 39.5% | 40.2% | 26.7% | 15.7% | 6.80*** |
| Dire Dawa | 46.8% | 32.9% | 28.5% | 23.2% | 14.07*** | 18.6% | 20.1% | 15.6% | 9.9% | 4.06*** |
| Gambela | 55.4% | 54.3% | 43.9% | 37.5% | 6.59*** | 42.5% | 27.8% | 19.1% | 20.7% | 6.16*** |
| Harari | 28.1% | 39.0% | 35.4% | 27.8% | 0.46 | 14.8% | 26.2% | 20.2% | 16.9% | -1.07 |
| Oromia | 63.8% | 61.6% | 43.8% | 48.5% | 10.35*** | 56.0% | 39.2% | 24.6% | 16.8% | 18.55*** |
| SNNPR | 64.6% | 61.1% | 56.7% | 45.5% | 11.89*** | 52.2% | 34.3% | 34.2% | 10.9% | 19.49*** |
| Somali | 63.4% | 57.8% | 63.5% | 32.5% | 13.09*** | 35.1% | 21.3% | 36.0% | 12.0% | 7.27*** |
| Tigray | 57.1% | 55.9% | 42.8% | 46.1% | 6.84*** | 42.8% | 25.1% | 26.0% | 18.5% | 7.97*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Women (15-49 years) | 63.3% | 60.3% | 46.2% | 43.1% |
| Men (15-59 years) | 48.1% | 33.2% | 26.3% | 17.1% |
| Significance of sex differences (two-tailed test) t value | 15.02*** | 30.62*** | 34.34*** | 42.15*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman argues with her husband/partner | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 62.8% | 59.7% | 53.3% | 9.32*** | Poorest | 40.7% | 37.9% | 21.2% | 14.47*** |
| Poorer | 68.1% | 53.1% | 54.1% | 9.50*** | Poorer | 41.1% | 33.3% | 21.4% | 10.67*** |
| Middle | 68.2% | 52.0% | 49.3% | 12.55*** | Middle | 35.7% | 31.4% | 19.9% | 8.62*** |
| Richer | 66.1% | 47.7% | 42.8% | 15.06*** | Richer | 33.5% | 24.1% | 18.2% | 9.31*** |
| Richest | 42.3% | 26.5% | 25.1% | 17.32*** | Richest | 19.0% | 10.6% | 8.1% | 9.58*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman refuses to have sex with her husband/partner | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Women (15-49 years) | | | | | | Men (15-59 years) | | | | |
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 56.3% | 48.3% | 41.4% | 36.8% | 28.96*** | 47.8% | 28.2% | 22.6% | 14.2% | 34.14*** |
| Urban | 34.6% | 23.1% | 20.8% | 16.8% | 15.55*** | 20.2% | 9.8% | 7.9% | 6.8% | 10.37*** |
| Rural | 61.1% | 53.7% | 47.8% | 42.5% | 23.13*** | 52.3% | 31.4% | 26.8% | 16.0% | 32.17*** |
| Addis Ababa | 19.4% | 12.0% | 7.4% | 5.0% | 13.26*** | 12.7% | 5.2% | 2.5% | 2.7% | 7.13*** |
| Afar | 72.8% | 54.1% | 57.4% | 52.5% | 7.77*** | 58.6% | 46.4% | 27.8% | 9.5% | 16.70*** |
| Amhara | 56.2% | 49.6% | 39.7% | 34.1% | 13.13*** | 34.0% | 24.2% | 21.3% | 20.7% | 4.93*** |
| Benishangul-Gumuz | 55.9% | 53.4% | 33.3% | 35.0% | 10.00*** | 36.0% | 28.3% | 21.0% | 12.6% | 7.20*** |
| Dire Dawa | 41.2% | 24.0% | 27.7% | 26.6% | 9.41*** | 24.5% | 18.7% | 11.6% | 6.7% | 7.63*** |
| Gambela | 39.5% | 49.8% | 30.4% | 28.3% | 3.50*** | 30.3% | 23.7% | 14.4% | 17.4% | 4.09*** |
| Harari | 25.2% | 26.3% | 35.3% | 25.5% | -0.004 | 9.0% | 25.8% | 17.0% | 16.0% | -2.55* |
| Oromia | 59.6% | 51.3% | 43.6% | 41.7% | 12.45*** | 56.4% | 34.0% | 23.3% | 12.8% | 21.79*** |
| SNNPR | 61.7% | 53.0% | 51.8% | 41.6% | 12.45*** | 56.1% | 32.1% | 28.8% | 12.0% | 21.02*** |
| Somali | 54.3% | 56.6% | 62.0% | 32.6% | 10.02*** | 58.5% | 21.2% | 38.6% | 13.1% | 16.42*** |
| Tigray | 45.1% | 38.1% | 26.9% | 34.7% | 6.42*** | 38.1% | 16.1% | 20.2% | 13.8% | 9.15*** |

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Women (15-49 years) | 56.3% | 48.3% | 41.4% | 36.8% |
| Men (15-59 years) | 47.8% | 28.2% | 22.6% | 14.2% |
| Significance of sex differences (two-tailed test) t value | 7.42*** | 22.08*** | 32.21*** | 39.05*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman refuses to have sex with her husband/partner | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 56.1% | 53.4% | 47.0% | 6.44*** | Poorest | 34.4% | 33.1% | 18.3% | 12.15*** |
| Poorer | 58.0% | 49.1% | 47.0% | 8.01*** | Poorer | 38.2% | 30.1% | 18.0% | 10.75*** |
| Middle | 55.1% | 46.6% | 43.4% | 7.45*** | Middle | 29.8% | 26.0% | 15.6% | 8.14*** |
| Richer | 50.0% | 44.1% | 35.8% | 8.38*** | Richer | 27.4% | 20.7% | 15.3% | 7.95*** |
| Richest | 29.4% | 21.5% | 19.5% | 9.42*** | Richest | 14.6% | 8.5% | 6.6% | 9.06*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Wife-beating is justified if the woman burns the food | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Women (15-49 years) | | | | Men (15-59 years) | | | | |
| | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value | 2000 | 2005 | 2011 | 2016 | Significance of change 2000-2016 (two-tailed test) t value |
| Ethiopia | 65.5% | 62.1% | 48.1% | 40.7% | 42.55*** | 44.9% | 26.3% | 22.3% | 12.6% | 32.21*** |
| Urban | 41.7% | 31.5% | 22.6% | 17.1% | 23.15*** | 15.2% | 8.4% | 5.6% | 4.6% | 7.62*** |
| Rural | 70.8% | 68.6% | 56.2% | 47.5% | 35.26*** | 49.8% | 29.5% | 26.9% | 14.5% | 31.00*** |
| Addis Ababa | 24.5% | 13.8% | 7.5% | 4.3% | 18.06*** | 10.1% | 3.7% | 2.3% | 1.7% | 6.81*** |
| Afar | 73.3% | 42.9% | 49.1% | 47.5% | 10.73*** | 41.8% | 39.1% | 23.4% | 5.8% | 14.23*** |
| Amhara | 67.8% | 69.3% | 50.2% | 36.6% | 19.33*** | 29.3% | 26.8% | 22.4% | 19.2% | 4.23*** |
| Benishangul-Gumuz | 71.7% | 59.0% | 41.7% | 31.4% | 18.30*** | 39.9% | 34.1% | 24.1% | 12.0% | 6.92*** |
| Dire Dawa | 42.0% | 23.9% | 25.8% | 23.6% | 11.58*** | 14.7% | 10.8% | 9.7% | 6.3% | 4.99*** |
| Gambela | 57.8% | 55.6% | 40.2% | 34.1% | 11.37*** | 34.9% | 22.1% | 17.9% | 16.0% | 6.21*** |
| Harari | 29.9% | 32.2% | 32.5% | 22.6% | 3.70*** | 8.2% | 12.0% | 12.5% | 14.6% | -2.58** |
| Oromia | 65.5% | 65.9% | 48.4% | 47.1% | 12.45*** | 55.7% | 29.9% | 19.9% | 11.8% | 22.49*** |
| SNNPR | 75.0% | 65.4% | 60.3% | 48.3% | 17.58*** | 51.5% | 29.9% | 33.2% | 9.6% | 20.48*** |
| Somali | 50.5% | 54.1% | 50.0% | 21.8% | 12.03*** | 31.0% | 11.2% | 20.5% | 7.0% | 10.04*** |
| Tigray | 57.7% | 53.7% | 38.6% | 39.6% | 10.72*** | 43.1% | 15.4% | 23.1% | 12.1% | 11.42*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Sex differences | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Women (15-49 years) | 65.5% | 62.1% | 48.1% | 40.7% |
| Men (15-59 years) | 44.9% | 26.3% | 22.3% | 12.6% |
| Significance of sex differences (two-tailed test) t value | 19.72*** | 38.26*** | 41.1*** | 44.87*** |

***p<0.001, **p<0.01, *p<0.05

| Wife-beating is justified if the woman burns the food | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Women (15-49 years) | | | | | Men (15-59 years) | | | | |
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 66.3% | 61.4% | 51.1% | 9.92*** | Poorest | 29.3% | 34.0% | 16.4% | 11.13*** |
| Poorer | 71.1% | 59.9% | 51.4% | 13.68*** | Poorer | 34.7% | 29.0% | 16.0% | 10.20*** |
| Middle | 70.2% | 57.0% | 47.7% | 14.54*** | Middle | 30.1% | 27.1% | 14.3% | 8.68*** |
| Richer | 70.2% | 49.7% | 42.9% | 17.66*** | Richer | 25.8% | 20.5% | 14.1% | 7.60*** |
| Richest | 40.1% | 22.9% | 20.3% | 17.77*** | Richest | 14.7% | 6.5% | 5.0% | 8.66*** |

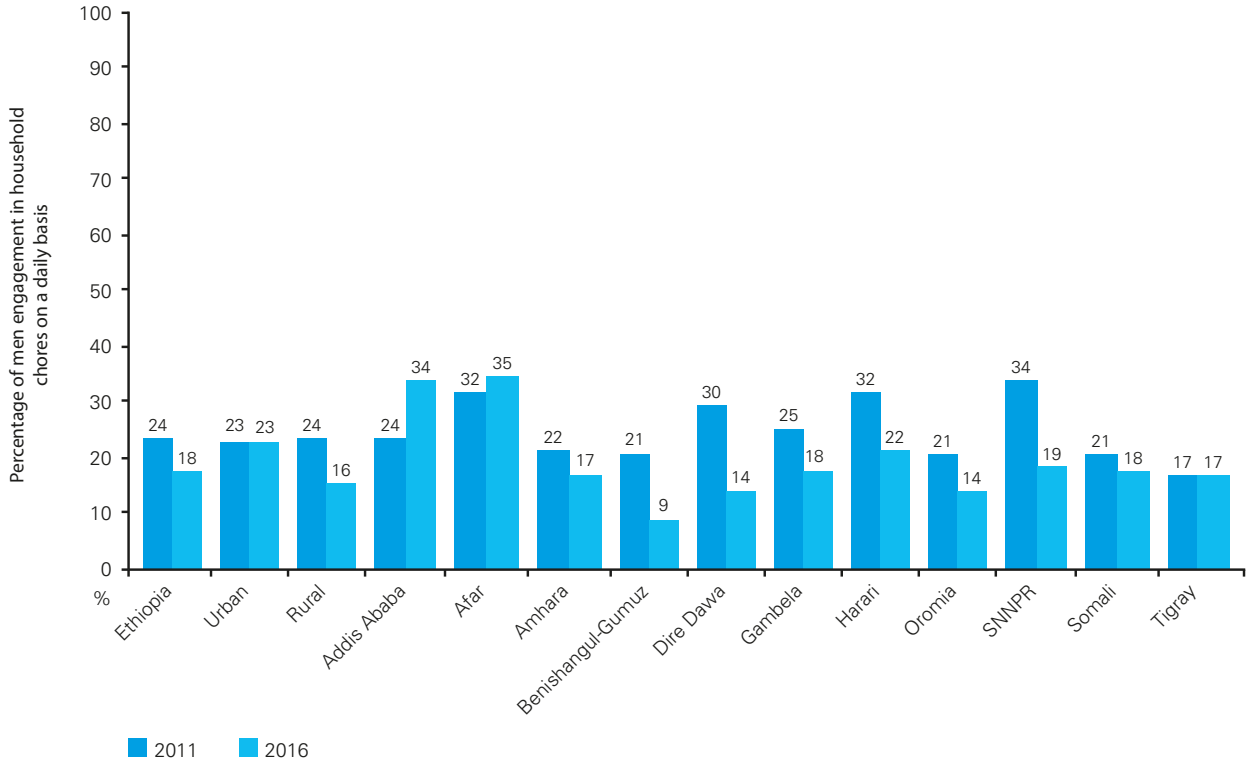
***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 55 Trends in labour market outcomes, youth and adults

| | 2000 | 2011 | 2016 |
|---|---|---|---|
| Employment rate, 15+, female, % | 64% | 72% | 71% |
| Employment rate, 15+, male, % | 86% | 87% | 85% |
| Employment rate, youth (15-24), female, % | 62% | 68% | 65% |
| Employment rate, youth (15-24), male, % | 78% | 78% | 74% |
| Labour force participation rate, 15+, female, % | 73% | 77% | 77% |
| Labour force participation rate, 15+, male, % | 90% | 90% | 88% |
| Unemployment, youth female (% of female labour force ages 15-24) | 16.7% | 10.1% | 9.7% |
| Unemployment, youth male (% of male labour force ages 15-24) | 7.1% | 4.8% | 5.0% |
| Employment in agriculture, female | 82.4% | 68.9% | 60.3% |
| Employment in agriculture, male (% of male employment) | 88.3% | 81.1% | 76.5% |
| Employment in industry, female (% of female employment) | 4.8% | 8.1% | 8.9% |
| Employment in industry, male (% of male employment) | 2.9% | 6.3% | 9.1% |
| Employment in services, female (% of female employment) | 12.8% | 23.1% | 30.9% |
| Employment in services, male (% of male employment) | 8.8% | 12.6% | 14.5% |
| Vulnerable employment, female (% of female employment) | 94.4% | 92.1% | 90.8% |
| Vulnerable employment, male (% of male employment) | 90.8% | 88.0% | 85.9% |
| Wage and salaried workers, female (% of female employment) | 5.4% | 7.8% | 9.0% |
| Wage and salaried workers, male (% of male employment) | 8.3% | 11.4% | 13.2% |

Source: World Bank ASPIRE database.

## Annex 56 Trends of engagement of men in household chores, by area and region of residence



## Annex 57 House and land ownership, by sex and area of residence, 2016

| | Women | | | | Men | | | |
|---|---|---|---|---|---|---|---|---|
| 2016 | House ownership | | Land ownership | | House ownership | | Land ownership | |
| | Alone | Jointly | Alone | Jointly | Alone | Jointly | Alone | Jointly |
| Ethiopia | 14.7% | 33.9% | 15.2% | 24.4% | 36.2% | 17.3% | 35.1% | 14.9% |
| Rural | 16.7% | 38.4% | 18.1% | 29.0% | 38.3% | 17.4% | 38.7% | 15.9% |
| Urban | 7.7% | 17.9% | 4.8% | 7.9% | 16.5% | 9.7% | 9.9% | 6.3% |
| Addis Ababa | 5.0% | 10.0% | 1.4% | 2.5% | 7.6% | 9.0% | 2.5% | 2.6% |
| Afar | 23.7% | 25.5% | 10.9% | 9.7% | 46.3% | 2.1% | 24.9% | 2.2% |
| Amhara | 8.1% | 53.7% | 14.2% | 36.1% | 20.7% | 30.8% | 21.6% | 23.6% |
| Benishangul-Gumuz | 31.5% | 28.4% | 27.5% | 23.9% | 53.0% | 9.9% | 46.0% | 8.0% |
| Dire Dawa | 5.0% | 22.9% | 3.3% | 14.9% | 28.4% | 9.4% | 15.6% | 8.9% |
| Gambela | 17.3% | 26.5% | 13.1% | 20.1% | 31.8% | 10.4% | 29.0% | 7.9% |
| Harari | 8.8% | 26.0% | 5.5% | 20.3% | 21.7% | 21.5% | 21.6% | 9.9% |
| Oromia | 19.0% | 26.5% | 17.6% | 18.8% | 44.7% | 9.0% | 43.8% | 9.8% |
| SNNPR | 18.9% | 30.2% | 16.6% | 29.5% | 37.1% | 15.1% | 37.4% | 16.9% |
| Somali | 11.6% | 44.0% | 5.4% | 25.1% | 42.2% | 8.2% | 24.0% | 7.0% |
| Tigray | 8.9% | 35.0% | 17.4% | 19.2% | 25.5% | 12.7% | 27.2% | 6.1% |

Source: Authors' calculations using EDHS data.

## Annex 58 Ownership and use of bank accounts and mobile phones, by sex, 2016

| | Ownership and use of a bank account | | Ownership and use of a mobile phone | |
|---|---|---|---|---|
| | Women | Men | Women | Men |
| Ethiopia | 15% | 26% | 27% | 54% |
| Rural | 7% | 16% | 15% | 47% |
| Urban | 44% | 63% | 71% | 87% |
| Addis Ababa | 53.6% | 66.6% | 87.0% | 94.4% |
| Afar | 7.4% | 18.4% | 31.3% | 66.0% |
| Amhara | 20.9% | 33.6% | 21.2% | 48.4% |
| Benishangul-Gumuz | 9.2% | 21.9% | 25.1% | 55.9% |
| Dire Dawa | 29.1% | 43.8% | 55.8% | 75.6% |
| Gambela | 18.3% | 37.4% | 46.1% | 73.1% |
| Harari | 26.0% | 32.5% | 55.2% | 77.3% |
| Oromia | 8.4% | 17.0% | 23.3% | 53.5% |
| SNNPR | 8.0% | 18.7% | 20.4% | 49.5% |
| Somali | 4.5% | 8.1% | 35.0% | 70.6% |
| Tigray | 22.7% | 35.5% | 31.4% | 62.3% |

Source: Authors' calculations using EDHS data.

## Annex 59 Trends in media exposure, by area and region of residence

| Women (15-49 years) | 2000 | 2005 | 2011 | 2016 |
|---|---|---|---|---|
| Ethiopia | 14% | 20% | 32% | 27% |
| Rural | 6% | 12% | 22% | 15% |
| Urban | 47% | 59% | 62% | 69% |
| Addis Ababa | 63.7% | 71.6% | 68.7% | 87.2% |
| Afar | 10.8% | 12.0% | 24.6% | 26.3% |
| Amhara | 8.5% | 16.4% | 26.4% | 16.8% |
| Benishangul-Gumuz | 12.4% | 14.0% | 22.3% | 20.0% |
| Dire Dawa | 42.2% | 47.4% | 57.6% | 58.0% |
| Gambela | 14.2% | 11.9% | 20.7% | 34.2% |
| Harari | 39.0% | 54.3% | 60.8% | 48.2% |
| Oromia | 11.6% | 20.4% | 31.0% | 27.7% |
| SNNPR | 11.0% | 13.9% | 31.3% | 19.3% |
| Somali | 10.5% | 9.5% | 17.9% | 11.3% |
| Tigray | 18.6% | 18.2% | 33.8% | 28.8% |

Source: Authors' calculations using EDHS data.

## Annex 60 Trends in women's participation in decision-making in the household, by area and region of residence

| Married women (15-49 years) | Women's own healthcare | | | | Major household purchases | | | | Visit family or relatives | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Ethiopia | 66.0% | 74.5% | 81.4% | -22.73*** | 57.3% | 66.5% | 78.1% | -27.04*** | 78.6% | 78.1% | 83.8% | -9.02*** |
| Rural | 63.8% | 71.7% | 79.5% | -6.47*** | 55.3% | 63.6% | 76.2% | -7.17*** | 77.1% | 76.1% | 82.2% | -0.98 |
| Urban | 83.9% | 87.2% | 90.9% | -20.54*** | 74.4% | 79.5% | 88.1% | -24.93*** | 92.0% | 86.9% | 91.7% | -8.02*** |
| Addis Ababa | 91.7% | 90.5% | 92.7% | -1.25 | 87.8% | 87.6% | 89.6% | -1.33 | 95.5% | 91.6% | 93.4% | 0.63 |
| Afar | 67.6% | 72.9% | 70.9% | -2.33* | 57.4% | 64.4% | 70.0% | -5.50*** | 75.1% | 70.0% | 74.3% | -0.36 |
| Amhara | 77.5% | 80.1% | 87.1% | -6.23*** | 66.1% | 68.5% | 86.9% | -12.01*** | 85.7% | 80.5% | 90.8% | -3.85*** |
| Benishangul-Gumuz | 57.1% | 70.9% | 79.7% | -7.35*** | 50.1% | 62.0% | 73.4% | -7.77*** | 68.2% | 72.9% | 83.4% | -5.82 |
| Dire Dawa | 73.1% | 80.5% | 84.4% | -4.10*** | 79.7% | 77.5% | 82.8% | -0.51 | 79.8% | 78.6% | 88.5% | -3.44*** |
| Gambela | 56.3% | 71.1% | 79.3% | -6.85*** | 42.0% | 61.4% | 74.4% | -9.90*** | 72.1% | 69.2% | 80.3% | -1.74 |
| Harari | 75.4% | 81.5% | 91.5% | -8.18*** | 71.5% | 75.9% | 89.6% | -8.41*** | 83.1% | 84.9% | 91.4% | -4.90*** |
| Oromia | 62.4% | 72.0% | 79.8% | -10.16*** | 56.7% | 69.7% | 76.7% | -11.19*** | 77.9% | 77.8% | 83.8% | -4.23*** |
| SNNPR | 58.0% | 67.7% | 76.6% | -10.13*** | 45.1% | 55.2% | 70.9% | -13.49*** | 72.1% | 74.9% | 76.0% | -2.22* |
| Somali | 54.1% | 55.4% | 75.9% | -9.64*** | 41.8% | 48.0% | 69.4% | -10.23*** | 52.6% | 53.4% | 80.5% | -11.69*** |
| Tigray | 65.5% | 87.4% | 84.1% | -9.69*** | 65.2% | 69.6% | 78.9% | -7.08*** | 89.5% | 84.4% | 81.5% | 4.52*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Women's own healthcare, married women age (15-49 years) | | | | | Major household purchases, married women age (15-49 years) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value | Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 60.1% | 68.7% | 76.3% | -10.31*** | Poorest | 47.8% | 57.7% | 72.2% | -14.56*** |
| Poorer | 61.4% | 72.0% | 77.5% | -10.49*** | Poorer | 54.0% | 64.3% | 75.4% | 12.05*** |
| Middle | 62.5% | 70.1% | 81.0% | -12.58*** | Middle | 57.0% | 63.7% | 75.2% | -11.59*** |
| Richer | 68.55 | 76.5% | 81.6% | -8.78*** | Richer | 60.7% | 67.0% | 80.4% | -12.08*** |
| Richest | 78.4% | 85.4% | 89.9% | -10.26*** | Richest | 67.6% | 79.6% | 86.8% | -11.79*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Visiting family or relatives, married women age (15-49 years) | | | | |
|---|---|---|---|---|
| Wealth quintiles | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
| Poorest | 73.1% | 72.1% | 79.2% | -4.97*** |
| Poorer | 76.3% | 76.1% | 80.2% | -4.13*** |
| Middle | 77.8% | 76.1% | 81.1% | -3.49*** |
| Richer | 80.3% | 79.0% | 86.6% | -4.82*** |
| Richest | 86.3% | 87.2% | 91.3% | -3.89*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 61 Trends in women's participation in decision-making about how her husband's/partner's earnings will be spent

| Women (15-49 years) | 2005 | 2011 | 2016 | Significance of change 2005-2016 (two-tailed test) t value |
|---|---|---|---|---|
| Ethiopia | 36.4% | 68.5% | 69.9% | -38.93*** |
| Rural | 38.1% | 67.4% | 69.3% | -34.60*** |
| Urban | 21.5% | 73.7% | 73.1% | -27.20*** |
| Addis Ababa | 12.5% | 77.0% | 69.9% | -23.57*** |
| Afar | 36.8% | 57.3% | 46.6% | -2.26* |
| Amhara | 29.4% | 73.8% | 80.6% | -28.66*** |
| Benishangul-Gumuz | 44.7% | 64.6% | 64.8% | -8.59*** |
| Dire Dawa | 27.1% | 62.3% | 68.7% | -14.50*** |
| Gambela | 52.6% | 58.6% | 51.7% | 1.29 |
| Harari | 24.5% | 61.4% | 76.7% | -19.09*** |
| Oromia | 36.7% | 68.1% | 71.4% | -20.00*** |
| SNNPR | 43.3% | 63.3% | 62.0% | -11.00*** |
| Somali | 54.8% | 37.0% | 49.9% | 2.15* |
| Tigray | 34.9% | 75.9% | 63.6% | -13.03*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

| Participation in the decision about partner's/husband's earnings, married women age (15-49 years) | | | | |
|---|---|---|---|---|
| **Wealth quintiles** | **2005** | **2011** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** |
| Poorest | 43.8% | 62.0% | 63.5% | -4.21*** |
| Poorer | 41.7% | 70.2% | 66.9% | -12.81*** |
| Middle | 38.0% | 66.7% | 69.9% | -15.97*** |
| Richer | 31.7% | 71.0% | 74.9% | -20.32*** |
| Richest | 25.7% | 72.8% | 73.8% | -38.38*** |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 62 Trends in decision-making about usage of contraception, by area and region of residence

| Percentage of women who decide about using contraception on their own or jointly with partner/husband | Women (15-49 years) | | | | |
|---|---|---|---|---|---|
| | **2000** | **2005** | **2011** | **2016** | **Significance of change 2000-2016 (two-tailed test) t value** |
| Ethiopia | 89.8% | 95.0% | 96.3% | 90.4% | 3.49*** |
| Urban | 90.9% | 96.2% | 98.5% | 95.4% | 0.90 |
| Rural | 88.6% | 94.4% | 95.1% | 89.5% | 0.53 |
| Addis Ababa | 98.7% | 97.7% | 99.1% | 95.7% | 2.28* |
| Afar | 82.3% | 88.9% | 96.3% | 89.3% | -1.14 |
| Amhara | 92.0% | 96.8% | 97.2% | 97.4% | -2.92** |
| Benishangul-Gumuz | 83.6% | 92.1% | 95.8% | 81.7% | 0.13 |
| Dire Dawa | 97.1% | 96.6% | 97.4% | 92.0% | 1.83 |
| Gambela | 89.6% | 94.9% | 93.8% | 88.3% | 1.93 |
| Harari | 95.0% | 94.8% | 96.5% | 89.0% | 1.85 |
| Oromia | 83.6% | 94.9% | 96.2% | 86.5% | -0.68 |
| SNNPR | 90.2% | 92.0% | 93.7% | 88.9% | -0.05 |
| Somali | 100.0% | 94.0% | 97.2% | 84.1% | 1.34 |
| Tigray | 92.3% | 93.1% | 96.6% | 95.1% | -1.29 |

***p<0.001, **p<0.01, *p<0.05

| Participation in the decision about usage of contraception, married women age (15-49 years) | | | | |
|---|---|---|---|---|
| **Wealth quintiles** | **2005** | **2011** | **2016** | **Significance of change 2005-2016 (two-tailed test) t value** |
| Poorest | 90.4% | 93.3% | 87.2% | 1.62 |
| Poorer | 94.1% | 95.9% | 88.1% | 1.74 |
| Middle | 93.7% | 93.6% | 89.9% | 1.58 |
| Richer | 93.6% | 96.1% | 91.6% | 1.34 |
| Richest | 96.7% | 98.5% | 94.9% | 1.81 |

***p<0.001, **p<0.01, *p<0.05
Source: Authors' calculations using EDHS data.

## Annex 63 Trends in control over sexual relations, by area and region of residence

| Married women (15-49 years) | 2005 | 2011 | 2016 |
|---|---|---|---|
| Ethiopia | 38.9% | 52.7% | 45.0% |
| Rural | 35.9% | 48.5% | 41.5% |
| Urban | 64.6% | 71.8% | 63.4% |
| Addis Ababa | 74.4% | 80.9% | 67.8% |
| Afar | 23.0% | 46.3% | 45.0% |
| Amhara | 41.6% | 63.5% | 64.0% |
| Benishangul-Gumuz | 28.2% | 54.9% | 41.2% |
| Dire Dawa | 50.7% | 49.7% | 46.0% |
| Gambela | 19.2% | 52.6% | 50.6% |
| Harari | 57.7% | 51.7% | 49.0% |
| Oromia | 39.8% | 48.8% | 34.1% |
| SNNPR | 31.5% | 35.6% | 36.0% |
| Somali | 13.2% | 41.9% | 28.4% |
| Tigray | 55.4% | 77.2% | 69.9% |

Source: Authors' calculations using EDHS data.

## Annex 64 Trends in empowerment in the education domain by region, women in union

| | Women empowered in none of the education indicators | | | Women empowered in 1 out of 2 education indicators | | | Women empowered in both education indicators | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 29% | 38% | 26% | 9% | 20% | 17% | 63% | 42% | 57% |
| Afar | 93% | 89% | 89% | 2% | 5% | 5% | 5% | 6% | 7% |
| Amhara | 91% | 86% | 80% | 5% | 9% | 9% | 4% | 5% | 11% |
| Benishangul-Gumuz | 90% | 87% | 84% | 5% | 6% | 7% | 5% | 7% | 9% |
| Dire Dawa | 68% | 69% | 68% | 4% | 11% | 10% | 27% | 20% | 22% |
| Gambela | 88% | 75% | 59% | 3% | 10% | 23% | 9% | 15% | 18% |
| Harari | 63% | 67% | 67% | 4% | 10% | 11% | 33% | 23% | 21% |
| Oromia | 89% | 86% | 85% | 5% | 6% | 6% | 7% | 8% | 8% |
| SNNPR | 91% | 87% | 86% | 4% | 7% | 6% | 5% | 6% | 7% |
| Somali | 96% | 92% | 93% | 1% | 4% | 4% | 4% | 4% | 3% |
| Tigray | 86% | 77% | 72% | 4% | 11% | 12% | 11% | 12% | 16% |

Source: Authors' calculations using EDHS data.

## Annex 65 Trends in economic empowerment by region, women in union

| | Women not economically empowered | | | Women economically empowered | | |
|---|---|---|---|---|---|---|
| Year | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 63% | 55% | 52% | 38% | 45% | 48% |
| Afar | 96% | 86% | 87% | 4% | 14% | 13% |
| Amhara | 93% | 77% | 88% | 8% | 23% | 12% |
| Benishangul-Gumuz | 87% | 66% | 87% | 13% | 34% | 13% |
| Dire Dawa | 71% | 63% | 74% | 29% | 37% | 26% |
| Gambela | 86% | 59% | 74% | 14% | 41% | 26% |
| Harari | 63% | 63% | 68% | 37% | 37% | 32% |
| Oromia | 90% | 68% | 82% | 10% | 32% | 18% |
| SNNPR | 89% | 66% | 74% | 11% | 34% | 26% |
| Somali | 94% | 82% | 87% | 6% | 18% | 13% |
| Tigray | 86% | 78% | 77% | 14% | 22% | 23% |

Source: Authors' calculations using EDHS data.

## Annex 66 Trends in empowerment in the Familial/interpersonal domain by region, women in union

| | Women empowered in none of the familial/interpersonal indicators | | | Women empowered in 1 out of 4 familial/ interpersonal indicators | | | Women empowered in 2 out of 4 familial/ interpersonal indicators | | | Women empowered in 3 out of 4 familial/ interpersonal indicators | | | Women empowered in all familial/ interpersonal indicators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 2% | 1% | 1% | 2% | 4% | 2% | 6% | 5% | 6% | 15% | 19% | 19% | 75% | 71% | 72% |
| Afar | 13% | 14% | 17% | 10% | 13% | 8% | 16% | 8% | 9% | 23% | 19% | 17% | 38% | 46% | 50% |
| Amhara | 8% | 7% | 4% | 8% | 8% | 4% | 12% | 12% | 5% | 22% | 20% | 16% | 50% | 53% | 71% |
| Benishangul-Gumuz | 20% | 13% | 12% | 16% | 10% | 5% | 12% | 13% | 7% | 17% | 20% | 11% | 35% | 45% | 65% |
| Dire Dawa | 6% | 8% | 2% | 10% | 5% | 4% | 12% | 8% | 8% | 16% | 21% | 19% | 55% | 57% | 66% |
| Gambela | 15% | 9% | 9% | 18% | 13% | 8% | 22% | 16% | 9% | 23% | 24% | 20% | 21% | 38% | 54% |
| Harari | 5% | 5% | 6% | 9% | 9% | 1% | 14% | 10% | 2% | 20% | 17% | 4% | 52% | 58% | 86% |
| Oromia | 11% | 9% | 11% | 15% | 8% | 6% | 16% | 13% | 5% | 18% | 21% | 14% | 40% | 49% | 65% |
| SNNPR | 11% | 12% | 12% | 19% | 13% | 8% | 23% | 16% | 11% | 23% | 17% | 12% | 24% | 42% | 57% |
| Somali | 29% | 23% | 12% | 15% | 19% | 8% | 15% | 12% | 10% | 18% | 22% | 14% | 24% | 23% | 55% |
| Tigray | 7% | 4% | 9% | 11% | 7% | 5% | 18% | 10% | 9% | 19% | 24% | 19% | 44% | 56% | 59% |

## Annex 67 Trends in empowerment in the attitudes towards wife-beating domain by region, women in union

| | Women empowered in none of the attitudes towards wife-beating indicators | | | Women empowered in 1 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in 2 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in 3 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in 4 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in all the attitudes towards wife-beating indicators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 4% | 3% | 1% | 5% | 3% | 2% | 9% | 4% | 4% | 11% | 6% | 3% | 13% | 10% | 9% | 59% | 74% | 80% |
| Afar | 24% | 35% | 36% | 18% | 13% | 11% | 21% | 14% | 9% | 17% | 9% | 8% | 8% | 6% | 10% | 13% | 24% | 27% |
| Amhara | 33% | 20% | 17% | 26% | 17% | 15% | 20% | 16% | 13% | 9% | 17% | 12% | 5% | 10% | 11% | 7% | 20% | 32% |
| Benishangul-Gumuz | 25% | 18% | 19% | 24% | 10% | 12% | 18% | 14% | 10% | 11% | 11% | 9% | 9% | 11% | 11% | 14% | 35% | 40% |
| Dire Dawa | 19% | 20% | 9% | 5% | 6% | 9% | 14% | 6% | 9% | 11% | 8% | 12% | 8% | 12% | 14% | 43% | 47% | 47% |
| Gambela | 24% | 21% | 17% | 19% | 11% | 10% | 14% | 13% | 10% | 14% | 13% | 12% | 11% | 13% | 13% | 18% | 29% | 38% |
| Harari | 16% | 26% | 16% | 14% | 9% | 9% | 20% | 9% | 6% | 12% | 12% | 6% | 8% | 10% | 8% | 29% | 35% | 55% |
| Oromia | 38% | 28% | 28% | 17% | 12% | 12% | 14% | 11% | 12% | 10% | 10% | 11% | 7% | 10% | 9% | 15% | 27% | 28% |
| SNNP | 38% | 39% | 28% | 17% | 14% | 11% | 11% | 10% | 10% | 9% | 9% | 8% | 8% | 8% | 10% | 16% | 20% | 33% |
| Somali | 26% | 33% | 15% | 22% | 23% | 7% | 25% | 14% | 7% | 13% | 9% | 9% | 7% | 8% | 7% | 9% | 15% | 58% |
| Tigray | 25% | 19% | 23% | 18% | 14% | 12% | 17% | 12% | 12% | 13% | 13% | 12% | 7% | 12% | 11% | 20% | 30% | 31% |

Source: Authors' calculations using EDHS data.

## Annex 68 Pearson's chi-squared and Spearman's rank correlation test between domains of women's empowerment, women in union

| | Pearson's correlation | | Spearman's rank order correlation | |
|---|---|---|---|---|
| | Pearson chi2 value | p-value | Spearman's rho | p-value |
| Education and familial/interpersonal domains | 237.43 | 0.000 | 0.1490 | 0.000 |
| Education and attitudes towards wife-beating domains | 870.51 | 0.000 | 0.2918 | 0.000 |
| Familial/interpersonal and attitudes towards wife-beating domains | 356.97 | 0.000 | 0.1558 | 0.000 |
| Economic and education domains | 692.36 | 0.000 | 0.2527 | 0.000 |
| Economic and Familial domains | 74.9 | 0.000 | 0.0828 | 0.000 |
| Economic and attitudes towards wife-beating domains | 154.8 | 0.000 | 0.1236 | 0.000 |

Source: Authors' calculations using EDHS data.

## Annex 69 Trends in economic empowerment of women by region, women not in union

| | Women not economically empowered | | | Women economically empowered | | |
|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 57% | 46% | 39% | 43% | 54% | 61% |
| Afar | 77% | 76% | 65% | 24% | 24% | 35% |
| Amhara | 84% | 75% | 70% | 16% | 25% | 30% |
| Benishangul-Gumuz | 83% | 59% | 75% | 17% | 41% | 25% |
| Dire Dawa | 62% | 61% | 59% | 38% | 39% | 41% |
| Gambela | 77% | 48% | 58% | 23% | 52% | 42% |
| Harari | 60% | 59% | 38% | 40% | 41% | 62% |
| Oromia | 86% | 71% | 69% | 14% | 29% | 31% |
| SNNPR | 77% | 58% | 74% | 23% | 42% | 26% |
| Somali | 85% | 75% | 74% | 15% | 25% | 26% |
| Tigray | 72% | 69% | 58% | 28% | 31% | 42% |

Source: Authors' calculations using EDHS data.

# Annex 70 Trends in empowerment in the education domain by region, women not in union

| | Women empowered in none of the education indicators | | | Women empowered in 1 out of 2 education indicators | | | Women empowered in both education indicators | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 27% | 25% | 21% | 9% | 20.24% | 19% | 63% | 55% | 64% |
| Afar | 74% | 72% | 64% | 9% | 15.44% | 16% | 18% | 13% | 20% |
| Amhara | 63% | 48% | 50% | 15% | 30.25% | 16% | 22% | 22% | 35% |
| Benishangul-Gumuz | 66% | 58% | 54% | 12% | 21.39% | 7% | 22% | 21% | 32% |
| Dire Dawa | 40% | 43% | 41% | 9% | 13.67% | 15% | 51% | 43% | 44% |
| Gambela | 74% | 58% | 39% | 12% | 24.07% | 14% | 14% | 18% | 42% |
| Harari | 31% | 32% | 38% | 8% | 17.36% | 19% | 61% | 50% | 44% |
| Oromia | 61% | 53% | 55% | 16% | 25.56% | 15% | 23% | 22% | 27% |
| SNNPR | 70% | 66% | 63% | 13% | 16.12% | 15% | 17% | 18% | 24% |
| Somali | 89% | 78% | 84% | 6% | 11.80% | 18% | 11% | 11% | 9% |
| Tigray | 54% | 47% | 51% | 12% | 27.20% | 16% | 34% | 25% | 33% |

Source: Authors' calculations using EDHS data.

# Annex 71 Trends in empowerment in the attitudes towards wife-beating domain by region, women not in union

| | Women empowered in none of the attitudes towards wife-beating indicators | | | Women empowered in 1 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in 2 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in 3 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in 4 out of 5 of the attitudes towards wife-beating indicators | | | Women empowered in all the attitudes towards wife-beating indicators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 | 2005 | 2011 | 2016 |
| Addis Ababa | 3% | 2% | 1% | 5% | 2% | 2% | 9% | 3% | 3% | 11% | 5% | 6% | 14% | 11% | 13% | 57% | 77% | 76% |
| Afar | 20% | 28% | 24% | 23% | 9% | 8% | 19% | 12% | 7% | 14% | 7% | 8% | 7% | 10% | 16% | 18% | 34% | 38% |
| Amhara | 26% | 13% | 9% | 22% | 10% | 11% | 24% | 13% | 13% | 11% | 19% | 13% | 8% | 17% | 14% | 9% | 28% | 40% |
| Benishangul-Gumuz | 20% | 16% | 10% | 19% | 12% | 9% | 15% | 11% | 7% | 21% | 12% | 7% | 11% | 11% | 9% | 14% | 39% | 57% |
| Dire Dawa | 10% | 10% | 6% | 5% | 6% | 5% | 7% | 5% | 7% | 7% | 9% | 9% | 10% | 12% | 13% | 61% | 58% | 60% |
| Gambela | 24% | 14% | 10% | 11% | 9% | 7% | 14% | 17% | 12% | 17% | 9% | 10% | 9% | 13% | 18% | 24% | 38% | 42% |
| Harari | 10% | 11% | 13% | 8% | 4% | 3% | 15% | 7% | 3% | 13% | 10% | 5% | 18% | 18% | 8% | 36% | 50% | 68% |
| Oromia | 32% | 17% | 21% | 16% | 8% | 11% | 11% | 10% | 8% | 11% | 9% | 9% | 7% | 13% | 14% | 24% | 44% | 38% |
| SNNPR | 31% | 28% | 27% | 16% | 14% | 8% | 12% | 10% | 10% | 11% | 8% | 10% | 10% | 12% | 13% | 21% | 27% | 32% |
| Somali | 24% | 29% | 14% | 16% | 13% | 6% | 20% | 17% | 7% | 16% | 11% | 8% | 5% | 14% | 12% | 19% | 18% | 53% |
| Tigray | 22% | 8% | 15% | 18% | 10% | 11% | 13% | 13% | 10% | 13% | 16% | 12% | 8% | 17% | 12% | 26% | 36% | 40% |

Source: Authors' calculations using EDHS 2016 data.

## Annex 72 Pearson's chi-squared and Spearman's rank correlation test between domains of women's empowerment, women in union

| | Pearson's correlation | | Spearman's rank order correlation | |
|---|---|---|---|---|
| | Pearson chi2 value | p-value | Spearman's rho | p-value |
| Education and economic domains | 71.54 | 0.000 | 0.0884 | 0.000 |
| Education and attitudes towards wife-beating domains | 704.13 | 0.000 | 0.3410 | 0.000 |
| Economic and attitudes towards wife-beating domains | 77.79 | 0.000 | 0.1136 | 0.000 |

Source: Authors' calculations using EDHS 2016 data.

# Annex 73 Bivariate relationships between children's wellbeing and control variables

| Bivariate relationships between women's empowerment status, domains of women's empowerment and other characteristics of the child and the mother with deprivation in the dimensions of children's wellbeing | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nutrition (children under 5 years) | | | | Health (children under 5 years) | | | | Health-related knowledge (children aged 5-17 years) | | | |
| Characteristics | N | [95% CI] | | P-value | N | [95% CI] | | P-value | N | [95% CI] | | P-value |
| Mother is empowered in 80% of the weighted indicators | 8728 | -0.646 | [-0.789,-0.503] | <0.001 | 8728 | -1.592 | [-1.744,-1.440] | <0.001 | 17178 | -1.65 | [-1.772,-1.527] | <0.001 |
| Mother is empowered in the education domain | 8728 | -0.349 | [-0.420,-0.279] | <0.001 | 8728 | -0.839 | [-0.913,-0.766] | <0.001 | 17178 | -0.911 | [-0.973,-0.849] | <0.001 |
| Mother is empowered in the Familial domain | 8728 | -0.086 | [-0.122,-0.050] | <0.001 | 8728 | -0.165 | [-0.198,-0.132] | <0.001 | 17178 | -0.154 | [-0.181,-0.127] | <0.001 |
| Mother is empowered in the attitudes towards wife-beating domain | 8728 | -0.059 | [-0.082,-0.035] | <0.001 | 8728 | -0.132 | [-0.153,-0.110] | <0.001 | 17178 | -0.099 | [-0.115,-0.082] | <0.001 |
| Mother is empowered in the economic domain | 8731 | -0.377 | [-0.501,-0.253] | <0.001 | 8731 | -0.665 | [-0.781,-0.548] | <0.001 | 17181 | -0.463 | [-0.544,-0.381] | <0.001 |
| Rural area | 8728 | 0.402 | [0.285,0.520] | <0.001 | 8728 | 1.44 | [1.324, 1.556] | <0.001 | 17178 | 1.21 | [-1.128,1.292] | <0.001 |
| Region (Addis Ababa=0) | 8728 | | | <0.001 | 8728 | | | <0.001 | 17178 | | | <0.001 |
| Tigray | | -0.119 | [-0.373,0.136] | | | 1.48 | [1.144,1.816] | | | 0.776 | [0.589,0.962] | |
| Afar | | 1.109 | [0.828,1.389] | | | 3.44 | [3.088,3.791] | | | 1.94 | [1.732,2.147] | |
| Amhara | | 0.497 | [0.231,0.763] | | | 2.418 | [2.080,2.756] | | | 1.28 | [1.092,1.467] | |
| Oromia | | 0.547 | [0.300,0.794] | | | 3.172 | [2.840,3.505] | | | 1.556 | [1.374,1.737] | |
| Somali | | 0.946 | [0.687,1.205] | | | 3.176 | [2.841,3.511] | | | 2.846 | [2.631,3.060] | |
| Benishangul-Gumuz | | 0.16 | [-0.102.0.422] | | | 1.743 | [1.405,2.081] | | | 1.826 | [1.627,2.026] | |
| SNNPR | | 0.345 | [0.095,0.595] | | | 2.474 | [2.145,2.804] | | | 1.624 | [1.441,1.807] | |
| Gambela | | 0.182 | [-0.104,0.469] | | | 2.658 | [2.298,3.019] | | | 1.744 | [1.529,1.960] | |
| Harari | | 0.696 | [0.398,0.993] | | | 2.161 | [1.810,2.513] | | | 1.552 | [1.337,1.767] | |
| Dire Dawa | | -0.087 | [-0.374,0.201] | | | 1.693 | [1.333,2.053] | | | 1.571 | [1.352,1.789] | |
| Mother is undernourished (BMI <18.5 kg/m2) | 8413 | 0.422 | [0.299, 0.544] | <0.001 | | | | | | | | |
| Wealth quintile (Poorest=0) | 8728 | | | <0.001 | 8728 | | | <0.001 | 17178 | | | <0.001 |
| Poorer | | -0.309 | [-0.453,-0.165] | | | -0.615 | [-0.749,-0.481] | | | -0.494 | [-0.611,-0.377] | |
| Middle | | -0.45 | [-0.599,-0.230] | | | -0.713 | [-0.854,-0.572] | | | -0.816 | [-0.929,-0.703] | |
| Richer | | -0.467 | [-0.624,-0.311] | | | -0.868 | [-1.014,-0.721] | | | -1.121 | [-1.231,-1.011] | |
| Richest | | -0.785 | [-0.915,-0.654] | | | -1.925 | [-2.055,-1.795] | | | -1.918 | [-2.019,-1.818] | |
| Mother's age under 18 at first birth | 8728 | 0.058 | [-0.040, 0.156] | 0.2475 | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Three or more children in the household | 8728 | 0.147 | [0.053,0.243] | 0.0023 | 8728 | 0.451 | [0.364,0.539] | <0.001 | | | | |
| Age of child | 8728 | | | <0.001 | 8728 | | | <0.001 | 17178 | | | <0.001 |
| 1 year | | 2.077 | [1.811,2.342] | | | -0.896 | [-1.047,-0.744] | | | | | |
| 2 years | | -0.531 | [-0.675,-0.386] | | | -0.777 | [-0.930,-0.624] | | | | | |
| 3 years | | -0.56 | [-0.704,-0.414] | | | -1.487 | [-1.637,-1.337] | | | | | |
| 4 years | | -0.424 | [-0.568,-0.281] | | | -1.453 | [1.601,-1.305] | | | | | |
| 5 years | | | | | | | | | | | | |
| 6 years | | | | | | | | | | 0.01 | [-0.060,0.258] | |
| 7 years | | | | | | | | | | 0.072 | [-0.086,0.231] | |
| 8 years | | | | | | | | | | -0.276 | [-0.183,0.127] | |
| 9 years | | | | | | | | | | -0.01 | [-0.178,0.157] | |
| 10 years | | | | | | | | | | 0.024 | [-0.136,0.184] | |
| 11 years | | | | | | | | | | -0.22 | [-0.396,-0.044] | |
| 12 years | | | | | | | | | | -0.095 | [-0.259,0.070] | |
| 13 years | | | | | | | | | | -0.195 | [-0.360,-0.030] | |
| 14 years | | | | | | | | | | -0.24 | [-0.414,-0.066] | |
| 15 years | | | | | | | | | | 0.306 | [0.089,0.524] | |
| 16 years | | | | | | | | | | 0.045 | [-0.162,0.252] | |
| 17 years | | | | | | | | | | -0.096 | [-0.322,0.131] | |
| Child is a girl | 8728 | -0.0248 | [-0.120,0.670] | 0.6079 | 8728 | -0.013 | [-0.099,0.074] | 0.7711 | 17178 | 0.016 | [-0.051,0.083] | 0.636 |
| No one in the household has knowledge about usage of ORS for treatment of diarrhoea | 8728 | 0.401 | [0.280,0.522] | <0.001 | 8728 | 3.401 | [3.136,3.667] | <0.001 | | | | |
| Father has a paid job | 5761 | -0.118 | [-0.244,0.008] | 0.0683 | 5761 | -0.498 | [-0.614,-0.382] | <0.001 | 10549 | -0.492 | [-0.581,-0.403] | <0.001 |
| Father has completed secondary or higher education | 5761 | -0.474 | [-0.624,-0.326] | <0.001 | 5761 | -0.986 | [-1.129,-0.843] | <0.001 | 10549 | -1.27 | [-1.393,-1.148] | <0.001 |
| Age of the mother | | | | | 8728 | -0.061 | [-0.116,-0.005] | <0.001 | 17178 | -0.01 | [-0.058, 0.038] | <0.001 |
| Age of the mother (squared) | | | | | 8728 | 0.001 | [-0.000,0.002] | <0.001 | 17178 | 0.000 | [-0.001,0.001] | |
| The household head is a woman | | | | | 8728 | 0.0966 | [-0.019, 0.212] | 0.0995 | | | | |
| Mother is exposed to media | | | | | 8728 | -0.767 | [-0.855,-0.678] | <0.001 | 17178 | -0.961 | [-1.032, -0.892] | <0.001 |
| Mother does not want to go alone to healthcare facility | | | | | 8728 | 0.513 | [0.423,0.604] | <0.001 | | | | |
| Health facility is far away | | | | | 8728 | 0.673 | [0.585,0.761] | <0.001 | | | | |

Source: Authors' calculations using EDHS data.

| Bivariate relationships between women's empowerment status, domains of women's empowerment and other characteristics of the child and the mother with deprivation in the dimensions of children's wellbeing | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Education (children aged 7-17 years) | | | | FGM (Girls 15-17 years) | | | |
| Characteristics | N | [95% CI] | | P-value | N | [95% CI] | | P-value |
| Mother is empowered in 80% of the weighted indicators | 13977 | -1.217 | [-1.374,-1.06] | <0.001 | 5457 | -1.801 | [-2.287,-1.317] | <0.001 |
| Mother is empowered in the education domain | 13977 | -0.664 | [-0.741,0.587] | <0.001 | 5457 | -1.060 | [-1.222,-0.897] | <0.001 |
| Mother is empowered Familial domain | 13977 | -0.098 | [-0.123,-0.073] | <0.001 | 5457 | -0.077 | [-0.118,-0.036] | <0.001 |
| Mother is empowered in the attitudes towards wife beating domain | 13977 | -0.08 | [-0.096,-0.063] | <0.001 | 5457 | -0.053 | [-0.080,-0.026] | <0.001 |
| Mother is empowered in Economic domain | 13979 | -0.347 | [-0.434,-0.259] | <0.001 | 5457 | -0.633 | [-0.797, -0.469] | <0.001 |
| Rural area | 13977 | 1.203 | [1.101,1.304] | <0.001 | 5457 | 1.012 | [0.838,1.187] | <0.001 |
| Region (Addis Ababa=0) | 13977 | | | <0.001 | 5457 | | | <0.001 |
| Tigray | | 0.898 | [0.646,1.150] | | | 0.906 | [0.367,1.445] | |
| Afar | | 1.872 | [1.615,2.130] | | | 4.535 | [3.986,5.085] | |
| Amhara | | 1.361 | [1.112,1.609] | | | 2.481 | [1.975,2.988] | |
| Oromia | | 1.766 | [1.525,2.008] | | | 0.737 | [0.221,1.255] | |
| Somali | | 1.918 | [1.672,2.164] | | | 2.544 | [2.044,3.044] | |
| Benishangul-Gumuz | | 1.255 | [1.003,1.508] | | | 1.671 | [1.151,2.191] | |
| SNNPR | | 1.515 | [1.272,1.757] | | | 1.562 | [1.056,2.069] | |
| Gambela | | 1.023 | [0.755,1.291] | | | 0.236 | [-0.467,0.939] | |
| Harari | | 0.927 | [0.656,1.199] | | | 1.145 | [0.595,1.696] | |
| Dire Dawa | | 0.899 | [0.624,1.174] | | | 1.359 | [0.811,1.907] | |
| Wealth quintile (Poorest=0) | 13977 | | | <0.001 | 5457 | | | <0.001 |
| Poorer | | -0.48 | [-0.582,-0.379] | | | -0.782 | [-0.955,-0.609] | |
| Middle | | -0.611 | [-0.714,-0.507] | | | -0.629 | [-0.801,-0.458] | |
| Richer | | -0.738 | [-0.843,-0.634] | | | -0.610 | [-0.782,-0.438] | |
| Richest | | -1.652 | [-1.759,-1.545] | | | -1.480 | [-1.663,-1.298] | |
| Mother's age under 18 at first birth | 12850 | 0.05 | [-0.020,0.120] | 0.1602 | 5372 | 0.298 | [0.183,0.412] | <0.001 |
| Three or more children in the household | 13977 | 0.565 | [0.490,0.640] | <0.001 | 5457 | 0.948 | [0.822,1.075] | <0.001 |
| Age of child | 13977 | | | <0.001 | 5457 | | | <0.001 |
| 1 year | | | | | | 0.256 | [-0.078,0.591] | |
| 2 years | | | | | | 0.429 | [0.101,0.757] | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3 years | | | | | | 0.31 | [-0.021,0.641] | |
| 4 years | | | | | | 0.465 | [0.137,0.793] | |
| 5 years | | | | | | 0.81 | [0.472,1.149] | |
| 6 years | | | | | | 0.444 | [0.124,0.764] | |
| 7 years | | | | | | 0.694 | [0.377,1.011] | |
| 8 years | | -0.428 | [-0.559,-0.297] | | | 0.815 | 0.499,1.132] | |
| 9 years | | -0.878 | [-1.031,-0.726] | | | 0.685 | [0.340,1.031] | |
| 10 years | | -0.29 | [-0.423,-0.156] | | | 0.81 | [0.494,1.124] | |
| 11 years | | -0.491 | [-0.201,0.103] | | | 1.104 | [0.739,1.140] | |
| 12 years | | 0.205 | [0.068,0.343] | | | 0.966 | [0.641,1.291] | |
| 13 years | | 0.443 | [0.303,0.583] | | | 1.239 | [0.906,1.571] | |
| 14 years | | 0.549 | [0.399,0.699] | | | 1.181 | 0.818,1.543] | |
| 15 years | | 0.728 | [0.548,0.907] | | | 1.582 | [1.191,1.971] | |
| 16 years | | 0.734 | [0.556,0.913] | | | 1.646 | [1.241,2.051] | |
| 17 years | | 1.035 | [0.825,1.245] | | | 1.132 | [0.695,1.570] | |
| Child is a girl | 13977 | 0.067 | [-0.000,0.133] | 0.0501 | | | | |
| No one in the household has knowledge about using ORS for treatment of diarrhoea | | | | | | | | |
| Father has a paid job | 8521 | -0.486 | [-0.585,-0.386] | <0.001 | 3549 | 0.029 | [-0.126,0.184] | 0.710 |
| Father has completed secondary or higher education | 8521 | -1.237 | [-1.402,-1.073] | <0.001 | 3549 | -1.080 | [-1.355,-0.804] | <0.001 |
| Age of the mother | 13977 | -0.045 | [-0.094,0.004] | <0.001 | 5457 | 0.055 | [-0.018,0.128] | 0.139 |
| Age of the mother (squared) | 13977 | 0.001 | [0.000,0.001] | <0.001 | 5457 | -0.000 | [-0.001,0.001] | 0.809 |
| The household head is a woman | 13977 | 0.036 | [-0.055,0.127] | 0.4349 | 5946 | 0.553 | [0.409,0.698] | <0.001 |
| Mother is exposed to media | | | | | 5457 | -0.346 | [-0.459,-0.233] | <0.001 |

Source: Authors' calculations using EDHS data.

# Annex 74 Tests of regression validity, goodness-of-fit, and multicollinearity between control variables

## Test of goodness-of-fit for logistic regressions

| | Model (a) Dependent variable: Nutrition | Model (b) Dependent variable: Health | Model (c) Dependent variable: Health-related knowledge | Model (d) Dependent variable: Education | Model (e) Dependent variable: FGM |
|---|---|---|---|---|---|
| Number of observations | 5630 | 5761 | 17181 | 8521 | 5457 |
| F-adjusted test statistic | F(9,592) - 1.358 | F(9,593) 0.719 | F(9,608) 1.655 | F(9,583) 0.329 | F(9,580) 0.694 |
| Prob > F | 0.204 | 0.692 | 0.097 | 0.965 | 0.715 |

## Link test for single-equation models

| | Model (a) Dependent variable: Nutrition | | | Model (b) Dependent variable: Health | | | Model (c) Dependent variable: Health-related Knowledge | | | Model (d) Dependent variable: Education | | | Model (e) Dependent variable: FGM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coeff | Std Errors | P > \|t\| | Coeff | Std Errors | P > \|t\| | Coeff | Std Errors | P > \|t\| | Coeff | Std Errors | P > \|t\| | Coeff | Std Errors | P > \|t\| |
| hat | 0.992 | 0.113 | 0.000 | 0.934 | 0.060 | 0.000 | 0.894 | 0.070 | 0.000 | 0.999 | 0.052 | 0.000 | 1.019 | 0.113 | 0.000 |
| hatsq | -0.002 | 0.039 | 0.815 | 0.061 | 0.313 | 0.052 | 0.090 | 0.044 | 0.041 | -0.004 | 0.028 | 0.892 | 0.011 | 0.044 | 0.795 |
| constant | -0.002 | 0.076 | 0.971 | -0.026 | 0.672 | 0.701 | -0.025 | 0.076 | 0.742 | 0.003 | 0.059 | 0.965 | -0.001 | 0.109 | 0.994 |
| Number of observations | 5630 | | | 5761 | | | 17181 | | | 8521 | | | 5457 | | |
| | F (2, 599) | | | F(2, 600) | | | F (2, 615) | | | F (2, 590) | | | F (2, 587) | | |
| Prob > F | 0.0000 | | | 0.0000 | | | 0.0000 | | | 0.0000 | | | 0.0000 | | |

## Variance Inflation Factor (VIF) to test for multicollinearity

| | Mean VIF |
|---|---|
| Model (a): Dependent variable - Nutrition | 2.80 |
| Model (b): Dependent variable - Health | 2.11 |
| Model (c): Dependent variable - Health-related knowledge | 2.81 |
| Model (d): Dependent variable - Education | 3.48 |
| Model (e): Dependent variable - FGM | 2.83 |

# Annex 75 List of Participants in the Inception and/or Validation Workshops

| INSTITUTION | NAME |
|---|---|
| Addis Ababa University (AAU) | Guday Emire |
| | Hirut Terefe |
| Africa Child Policy Forum (ACPF) | Negussie Dejene |
| | Saba Lishan |
| African Unioin (AU) | Rahel Aytenew |
| CARE Ethiopia | Addisalem Birhanu |
| Centers for Disease Control and Prevention (CDC) Ethiopia | Clare Dykewicz |
| Central Statistics Agency (CSA) | Asnakech Habtamu |
| | Fekade Asrat |
| Ethiopian Society of Sociologists, Social Workers and Anthropologists (ESSSWA) | Sintayheu Dejene |
| | Zelalem Anteneh |
| Family Guidance Association of Ethiopia | Genet Mengistu |
| | Seblewongel Fekadu |
| Federal Attorney General (FAG) | Helen Tesfaye |
| | Sebelewongel Fekadu |
| Federal Police Commission | Hana Bezabeh |
| | Kalkidan Wondwossen |
| FHI 360 | Bethlehem Fekadu |
| Ministry of Culture and Tourism (MoCT) | Betelhem Tigneh |
| Ministry of Finance (MoF) | Bereket Gedlu |
| Ministry of Health (MoH) | Likelesh Lemma |
| Ministry of Labour and Social Affairs (MoLSA) | Dawit Assefa |
| | Miraj Juhar |
| Ministry of Water, Irrigation and Energy (MoWIE) | Zelalem Asfaw |
| Ministry of Women, Children and Youth (MoWCY) | Azeb Rezene |
| | Binyam Hambisa |
| | Dereje Tegyebelu |
| | Ephreme Tsefaye |
| | Mahider Bitew |
| | Million Fiker |
| | Minyamir Yitayih |
| | Misganaw Yilma |
| | Misrak Tsehay |
| | Moges Mekonnen |
| | Mussie Tamir |
| | Nebiyu Dejenie |
| | Selamawit Maru |
| | Seleshi Tadesse |
| | Semegne Wube |
| Norway Embassy | Tsige Alemayehu |

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| Norwegian Church Aid | Addisalem Befekadu |
| | Mengistie Tegenie |
| Plan International | Martha Yigezu |
| Population council/Country Director | Annabel Erulkar |
| PSI/ Adolescents 360 | Metsehate Ayenekulu |
| Save the Children | Kinfe Wubetu |
| The Girl Generation | Wubalem Negash |
| UNICEF | Ali Ahmed Mumin |
| | Ellen Alem |
| | Getachew H/Michael |
| | Hiwot Gebeyehu |
| | Martha Kibur |
| | Mekiya Feki |
| | Tiye Feyisa |
| | Vincenzo Vinci |
| | Yejimmawerk Ayalew |
| | Zemzem Shikur |
| UNWOMEN | Bezawit Bekele |
| | Luam Zenebe |
| USAID | Meseret Kassa |
| World Vision | Tsegaab Tadesse |
| Young Lives Ethiopia | Kiros Birhanu |

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**Ministry of Women, Children and Youth**

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